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**METHAMPHETAMINE REMEDIATION RESEARCH ACT OF 2005:
JUST WHAT THE DOCTOR ORDERED FOR CLEANING UP
METHFIELDS—OR SUGAR PILL PLACEBO?**

*Aaron R. Harmon*¹

Methamphetamine labs can be set up anywhere. One batch of methamphetamine produces five to seven pounds of toxic byproduct. These contaminants are often dumped at the production site and, along with airborne contaminants from the cooking process, leave behind a “methfield.” States have developed widely divergent standards for methfield remediation. This Comment examines the solution proposed under the Methamphetamine Remediation Research Act of 2005 (“MRRA”). Part II provides some background on methamphetamine use, production, and cleanup. Part III reviews how methfields have been addressed by state and federal agencies. Part IV evaluates the MRRA and assesses its potential contributions to the methfield remediation movement. Parts V and VI critique the MRRA, identifying potential weaknesses and outlining opportunities for improvement.

I. INTRODUCTION

A young couple recently moved to the city. She was fresh out of law school; he was a freelance photographer. They made the move for her new job because it was a good opportunity, and his job gave him the flexibility to work most anywhere. They were both excited about the move. They loved the outdoors, and neither of them had ever spent any time in this part of the country. The air smelled much cleaner here than it did back home. They rented an apartment in a nice suburban neighborhood while they looked for a

¹ J.D. Candidate, University of North Carolina School of Law, 2007. Special thanks to Professor Donald Hornstein for his helpful comments and guidance.

house closer to her work. She studied for the bar exam at night while he unpacked.

After a couple of days, they both started feeling sick. Not sick like the stomach flu, but more like a sore throat or a really bad case of allergies. They were wheezy, congested, and itchy all over. Their eyes were red and raw. She was worse off than he was because she had suffered from asthma as a child. Neither was sleeping very well; they both tossed and turned each night, and woke up feeling jittery and grouchy. She was having trouble concentrating on her studies. They bought cold medicine and chicken soup, but a few days later the symptoms had worsened. The itching had developed into what looked like a rash, and they became nauseated. Keeping food down had become a challenge.

They went to a doctor, but he could not find anything wrong. He asked if they had changed any of their habits since their move, or if there was anything at their new home to which they might be allergic. They could not think of anything, but mentioned a strange smell coming from the kitchen and bathtub drains. It smelled like a swimming pool with too much chlorine. They had noticed a similar smell coming from the drainage grate outside of the apartment. They thought it was because of the local water treatment plant, so they had started buying bottled water. The doctor gave them some antibiotics, and sent them home to rest.

The next day, when they went to pick up a package at the leasing office, the manager asked them how they were adjusting to the move. "Not very well," they told her. They felt sick and they didn't know why. "What kind of sick?" she asked. After they told her their symptoms, her face went pale. "You aren't in apartment 4870-C, are you?" When they confirmed that was their apartment, the manager excused herself and made a call. She returned and told them the maintenance people would move their belongings to an apartment on the other side of the complex, and she would personally go with them to the emergency room.

On the way to the hospital, the manager told them that four months ago they had discovered the previous tenants had been operating a methamphetamine lab in that apartment. It had been abandoned, and there had been lab equipment and empty

containers everywhere. Apartment staff had aired out the apartment, cleaned up the mess, put in a new carpet, repainted, and replaced the drapes before renting it out again. Unfortunately, the plumbing nor ventilation systems had been checked. After they moved to their new apartment, the symptoms gradually went away. Only time will tell if they suffered any permanent damage.²

Many people associate methamphetamine (commonly referred to as “meth”) with the fringe elements of society. Some people link it to the gay club scene,³ while others equate it with truck drivers and “rednecks.”⁴ The truth is, while the methamphetamine

² The introduction is a fictional compilation of several anecdotal accounts. See generally Anna S. Vogt, Comment, *The Mess Left Behind: Regulating the Cleanup of Former Methamphetamine Laboratories*, 38 IDAHO L. REV., 251, 251 (2001); Travis Dunn, *Dealing with the Remnants of Meth Labs*, DESERT DISPATCH, Sept. 7, 2005, available at <http://www.desertdispatch.com/2005/112611455078593.html> (last visited Apr. 20, 2006) (describing symptoms experienced by people who unknowingly move into former meth lab sites) (on file with the North Carolina Journal of Law & Technology); Chris Hamilton, *Home Meth Labs Leave Toxic Trail—More Meth Labs Are Being Found in Minnesota, Endangering People and the Environment*, DULUTH NEWS TRIB., Mar. 2, 2004, at 1A, available at 2004 WLNR 3196254 (same); Karen B. Snyder, *Methamphetamine's Reach Affects Far Too Many Innocent People*, SEATTLE POST-INTELLIGENCER, July 29, 2000, at A11 (relating the author's personal experience after moving into a Seattle apartment where neighbors were producing methamphetamine); Denver News Channel 7, *Dangerous Residue: Was Your Home a Meth Lab? No State Law Requires Disclosure About Meth Labs*, <http://www.thedenverchannel.com/news/2846018/detail.html> (last visited Apr. 20, 2006) (describing health effects suffered by tenant after moving into former meth lab) (on file with the North Carolina Journal of Law & Technology).

³ See Michael Specter, *Higher Risk—Crystal Meth, The Internet, and Dangerous Choices about AIDS*, NEW YORKER, May 23, 2005, available at http://www.newyorker.com/fact/content/articles/050523fa_fact (last visited Apr. 20, 2006) (“Crystal [methamphetamine] first gained popularity in the gay community of San Francisco in the nineteen-nineties, where it became the preferred fuel for all-night parties and a necessity for sexual marathons.”) (on file with the North Carolina Journal of Law & Technology).

⁴ Office of National Drug Control Policy, Pulse Check National Trends in Drug Abuse, Spring 1996, http://www.whitehousedrugpolicy.gov/publications/drugfact/pulsechk/spring96/p_6semrg.html (last visited Apr. 20, 2006) (“A Georgia treatment provider described methamphetamine as “redneck cocaine,” referring to its popularity among white working class users who may have

problem has smoldered for years in both the homosexual and blue-collar communities, in the last ten years the problem has spread throughout the country.⁵ During the process, it has moved out of the clubs and poor rural areas and into the cities and suburbs.⁶ The meth phenomenon involves not only drug users, but also drug producers, and it is as likely to rear its ugly head in the suburbs as it is in trailer parks.⁷

The significance is that, unlike most drugs, methamphetamine can be easily produced at home using materials that can be purchased at a local hardware store or Wal-Mart.⁸ Manufacturing

formerly used cocaine.”) (on file with the North Carolina Journal of Law & Technology); Wikipedia, Amphetamine, <http://en.wikipedia.org/wiki/Amphetamines> (last visited Apr. 20, 2006) (“Amphetamines [and methamphetamines] have been popular among some truck drivers, construction workers, and factory workers whose jobs require long or irregular shift work or automatic, repetitive tasks. It is for this reason that they are sometimes labeled a ‘redneck drug.’”) (on file with the North Carolina Journal of Law & Technology).

⁵ See *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 37 (2005) (statement of John W. Martyny, Associate Professor, University of Colorado Denver/Health Sciences Center) [hereinafter *Hearing—Martyny Testimony*] (“The explosion of these clandestine laboratories has occurred during the last 10 years and has been studied for even a shorter period.”). In 1993, the DEA seized 218 meth labs. By 2004, there were nearly 16,000 labs operating in forty-nine states. Press Release, National Multi Housing Council, Apartment Groups Call for National Clean Up Standards for Illegal Methamphetamine Labs (Mar. 3, 2005) [hereinafter Press Release—NMHC], available at <http://www.nmhc.org/Content/ServeContent.cfm?ContentItemID=3371> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

⁶ Pamela Brogan, *Meth Lab Fire, Explosion Risks Moving into Populated Areas*, GANNETT NEWS SERVICE, July 12, 2005 (“The number of clandestine methamphetamine labs is growing and their locations are shifting from isolated, rural facilities to houses, trailers and apartments in more densely populated urban areas.”).

⁷ *Id.*; Doug McPherson, *Home’s Past Could Include Meth—A Former Lab Can Leave a Dangerous and Costly Surprise in Toxic Chemicals*, DENVER POST, Jan. 30, 2005, at K-04 (“[D]on’t think you’re immune if you’re only looking at ‘nice homes in safe neighborhoods.’ Cops say labs are as likely to be found in mansions as in shacks.”).

⁸ See *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 54 (2005) [hereinafter

meth is a dangerous process, but not a complicated one.⁹ Meth labs can be set up anywhere, and the finished product can be generated in about eight hours.¹⁰ If things go well, the producers can close up shop and move on without anyone ever knowing the lab was there.¹¹ If things go badly, innocent people can be hurt or killed in explosions and fires.¹² Even when no explosion occurs,

Hearing—Bell Testimony] (statement of Robert R. Bell, President, Tennessee Technological University) (“It is an evil blend of common household and farming products including anhydrous ammonia, acetone, antifreeze, and the active ingredients in some cold medicines, ephedrine and pseudoephedrine.”); *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 44 (2005) [hereinafter *Hearing—Hamilton Testimony*] (statement of Henry L. Hamilton, Acting Commissioner, New York State Department of Environmental Conservation) (“There are about 150 different ways to manufacture methamphetamine. Recipes are readily available, including on the internet, and so are the ingredients.”); *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 49 (2005) [hereinafter *Hearing—Howard Testimony*] (statement of Gary G. Howard, Sheriff, Tioga County, New York) (“Every meth ‘recipe’ starts with over-the-counter medications that include pseudoephedrine or ephedrine in their contents. The pills are crushed and mixed with other chemicals in the process of cooking meth.”); Rick Stuart, *Costly and Hazardous—Meth Labs*, Kansas County Appraisers Association, <http://www.accesskansas.org/kcaa/reports/meth.htm> (last visited Apr. 20, 2006) (“The rise in the number of meth labs stems from availability of precursor chemicals and the increasing popularity, ease of manufacture, low production cost, and high profits from the drugs.”) (citation omitted) (on file with the North Carolina Journal of Law & Technology).

⁹ Hamilton, *supra* note 2, at 1A (“Anyone who can read can make meth A meth maxim is that anyone who can bake a cake can make meth. Unlike cocaine or heroin, a suburban 15-year-old can make it.”).

¹⁰ Hamilton, *supra* note 2, at 1A (“With most labs, it takes about eight hours to set up, cook the product, dispose of the waste and take apart the lab, a 2002 DEA report says.”); McPherson, *supra* note 7, at K-04 (“Criminals can set up shop, make the drug and completely disassemble their cookers in a couple of hours.”).

¹¹ McPherson, *supra* note 7, at K-04 (“[The methamphetamine] contamination may go undetected unless the drugmakers are busted.”).

¹² See *Hearing—Hamilton Testimony*, *supra* note 8, at 45 (“A variety of ignitable, corrosive, toxic or reactive wastes can result from the manufacture of methamphetamine. Red phosphorous, lithium, and many other chemicals used during production of methamphetamine are also highly flammable or combustible. The improper handling or storage of these items by

the toxic dump left by a methamphetamine lab can have devastating effects on the environment and on the health of those who later come in contact with it.¹³ Cleaning up a former meth lab (also known as a “methfield”¹⁴) requires more than just a broom and washcloths. It is a serious endeavor, and should be treated with the degree of caution given to any other chemical leak or spill.¹⁵

Although it would seem that such a serious problem would warrant an organized response, methfield cleanup is one of the

methamphetamine users and producers increases the potential for fires and explosions.”); Office of National Drug Control Policy, Fact Sheet: Impact of Methamphetamine on the Environment [hereinafter ONDCP Methamphetamine Environment Fact Sheet], http://www.whitehousedrugpolicy.gov/news/press05/meth_environment_factsheet.html (last visited Apr. 20, 2006) (“The process of making methamphetamine—in both large and small laboratories—involves at least one, and sometimes more than one, stage with a significant risk of explosion and/or fire. Some of the chemicals used to produce methamphetamine have independent toxicity; when combined, they can have serious toxic and explosive effects.”) (on file with the North Carolina Journal of Law & Technology).

¹³ Brogan, *supra* note 6 (“‘Chemicals from [meth] dumpsites contaminate water supplies, kill livestock, destroy national forest lands and render areas uninhabitable,’ the [Justice Department’s National Drug Threat Assessment for 2003] said.”).

¹⁴ See OFFICE OF BROWNFIELDS CLEANUP AND DEVELOPMENT, ENVIRONMENTAL PROTECTION AGENCY, EPA-560-F-05-232, METHFIELDS: BROWNFIELDS FUNDING AND TECHNICAL ASSISTANCE TO ADDRESS CLANDESTINE DRUG LABS [hereinafter METHFIELDS] (2005).

¹⁵ See Press Release, Comm. on Science, Democratic Caucus, Gordon Continues Fight to Rid Communities of Methamphetamine [hereinafter Press Release—Gordon Continues Fight] (Apr. 20, 2005), *available at* <http://sciencedems.house.gov/press/PRArticle.aspx?NewsID=28> (last visited Apr. 20, 2006) (“Meth labs are highly toxic and pose serious health risks to our communities.”) (on file with the North Carolina Journal of Law & Technology); Press Release, Comm. on Science, Democratic Caucus, Science Committee Democrats Work to Clean Up Methamphetamine, Aid Local Communities [hereinafter Press Release—Democrats Work] (Mar. 3, 2005), *available at* <http://sciencedems.house.gov/press/PRArticle.aspx?NewsID=64> (last visited Apr. 20, 2006) (“‘These labs may pose a health and safety threat after drug production ceases due to the presence of hazardous manufacturing byproducts and residual production chemicals, if cleanup is not done properly,’ [according to the] National Multi Housing Council and the National Apartment Association.”) (on file with the North Carolina Journal of Law & Technology).

most disorganized fronts in the "War on Drugs." States vary widely when it comes to cleanup standards, in part because of the lack of data to help state legislatures and agencies create health-based cleanup levels for contractors and property owners to properly remediate affected areas.¹⁶ Even the most sophisticated state program only covers a fraction of the potentially hazardous chemicals commonly found at methfield sites.¹⁷ Some states, like North Carolina, have yet to establish binding standards for acceptable levels of contamination.¹⁸ The federal government has not been very helpful in this regard either. For example, the Drug

¹⁶ Staff Report to Rep. Gordon, *Methamphetamine Abuse: The Search for Solutions*, 7 (2005) [hereinafter Staff Report], available at http://democrats.science.house.gov/Media/File/Reports/meth_staff_report_2005.pdf (last visited Apr. 20, 2006) ("[W]e don't know what health consequences may attend those who later come to inhabit a site [and] there is no requirement in most jurisdictions that a property be fully remediated.") (on file with the North Carolina Journal of Law & Technology); Association of State and Territorial Health Officials, Issue Brief: Cleaning-up Clandestine Methamphetamine Labs: The Role of State Public Health Agencies [hereinafter ASTHO—Issue Brief], 3 (June 2005), available at <http://www.astho.org/pubs/MethLabsCleanup2005.pdf> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹⁷ Washington State, widely recognized as having the most comprehensive cleanup standards and guidelines, only regulates four chemicals: (1) Methamphetamine, (2) Volatile Organic Compounds, (3) Lead, and (4) Mercury. Division of Environmental Health, Washington State Department of Health, Rationale for the Establishment of the Washington State Department of Health's Clandestine Drug Lab Program Decontamination Standards, 3 (July 2005) [hereinafter Washington State Rationale] <http://www.doh.wa.gov/ehp/ts/CDL/estab-cdl-standards.pdf> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹⁸ The North Carolina guidelines do not mandate post-decontamination testing. However, they do indicate that if testing is conducted, the clearance level for methamphetamine residue is 0.1 micrograms per 100 square centimeters, lead is 4.3 micrograms per 100 square centimeters, and mercury is 0.3 micrograms per cubic meter. These numbers have not been codified by statute. See Occupational and Environmental Epidemiology Branch, Department of Health and Human Services, State of North Carolina Illegal Methamphetamine Laboratory Decontamination and Re-occupancy Guidelines 18–19 (April 2005) [hereinafter North Carolina Guidelines] <http://www.epi.state.nc.us/epi/oii/pdf/methguidelines042005.pdf> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

Enforcement Administration (“DEA”) does some cleanup, but its focus is primarily on securing the crime scene, not intensive environmental cleanup.¹⁹ The Environmental Protection Agency (“EPA”) also has the ability to provide assistance, but many methfields are too small to warrant federal intervention.²⁰ State legislatures and administrative agencies have, for the most part, been required to develop solutions to the problem on their own.

Hopefully, the fragmented response to methfield remediation will itself be remedied in the near future. On December 13, 2005, the United States House of Representatives unanimously passed the Methamphetamine Remediation Research Act of 2005 (“MRRA”)²¹ to consolidate existing information and guidelines,

¹⁹ See H. Comm. on Science, 109th Cong., Methamphetamine Remediation Research Act—Background, [hereinafter MRRA Background], *available at* <http://www.house.gov/science/hearings/full05/mar3/Background.pdf> (last visited Apr. 20, 2006) (“DEA handles the bulk of the cleanup at the federal level, but this involves securing evidence and removal of gross contaminants—not the remediation of residual chemicals.”) (on file with the North Carolina Journal of Law & Technology); Staff Report, *supra* note 16, at 7–8 (“Currently the [DEA] pays for the initial clean-up and disposal of chemicals in a meth lab. . . . DEA is responsible for this stage of clean-up because the products on the premises are considered a part of the crime scene that must be removed. However, DEA’s responsibility ends when the obvious implements of meth production are removed. DEA’s contractors do not make any effort to remediate the site nor to thoroughly document chemical pollution on the site.”).

²⁰ See *Impact of Methamphetamines on Health and Environment Before the Subcomm. on Health of the H. Comm. on Energy and Commerce*, 109th Cong. 3–4 (2005) [hereinafter *Hearing—Murtha Testimony*] (statement of Peter Murtha, Director, Office of Criminal Enforcement, Forensics and Training, U.S. Environmental Protection Agency) (“Identifying and cleaning up the vast majority of methamphetamine labs is done by local and state governments, and methamphetamine labs do not generally involve scenarios that would trigger response under the Superfund law. EPA does respond in that small percentage of cases when local or state resources cannot address the problem.”); MRRA Background, *supra* note 19 (“EPA responds when the threat is ‘imminent and substantial’—the trigger under Superfund—but most small labs don’t rise to this level.”).

²¹ Methamphetamine Remediation Research Act of 2005, H.R. 798, 109th Cong. (2005). An identical bill has been introduced in the Senate. See *House Passes Bill to Protect 1st Responders Entering Meth Labs*, INSIDE CMS, Dec. 29, 2005, Vol. 8, No. 26 (“An identical bill [to the MRRA] introduced by Sens.

and to direct further research on this issue. If passed by the Senate, the MRRA would address four major problem areas that limit current response measures. First, it would require the EPA to develop voluntary cleanup guidelines for states to use as a model in developing their own programs.²² Second, it would assess current research findings and programs, and develop additional programs to fill in data gaps.²³ Third, it would authorize research into more effective detection methods to protect the “first responders”—such as police, firefighters, and paramedics—on a meth site, as well as for later use in site cleanup.²⁴ Finally, the MRRA would institute a periodic conference for states and federal agencies to disseminate new findings and to evaluate the effectiveness of current programs.²⁵

This Comment examines the solution proposed under the MRRA, as compared to the status quo. Part II provides background on the methamphetamine epidemic from three perspectives: use, production, and cleanup. Part III discusses how methamphetamine production and cleanup problems have been addressed up to this point by both state and federal agencies. Part IV examines and evaluates the MRRA, discussing its potential contributions to the methfield remediation movement. Parts V and VI provide a critique of the MRRA, identifying potential weaknesses in the version recently passed by the House and outlining opportunities for lawmakers to improve upon the legislation prior to or subsequent to its passage.

Gordon Smith (R-OR) and Max Baucus (D-MT) has been referred to the Senate Committee on Environment and Public Works.”).

²² Methamphetamine Remediation Research Act of 2005, H.R. 798, 109th Cong. §§ 2(6), 3(a), 3(c) (2005).

²³ *Id.* at § 4.

²⁴ *Id.* at § 7.

²⁵ *Id.* at § 5.

II. THE NUMBER ONE DRUG PROBLEM IN AMERICA²⁶

A. A Nationwide Epidemic

Methamphetamine is an extremely addictive stimulant that affects the central nervous system.²⁷ It is often placed in the same class with other amphetamines as an amphetamine-type stimulant ("ATS").²⁸ It is known by a variety of names, but is most commonly referred to as "meth," "crank," or "crystal."²⁹ It can be smoked, snorted, injected, or taken orally.³⁰ It is one of the most addictive of all illegal drugs,³¹ and has one of the lowest recovery

²⁶ See Brogan, *supra* note 6 ("[Meth] was identified as the No. 1 drug problem by law enforcement agencies in 45 states, according to a National Association of Counties survey released July 5."); David J. Jefferson et al., *America's Most Dangerous Drug*, NEWSWEEK, Aug. 8, 2005, at 41 ("Cops nationwide rank methamphetamine the No. 1 drug they battle today: in a survey of 500 law-enforcement agencies in 45 states released last month by the National Association of Counties, 58 percent said meth is their biggest drug problem, compared with only 19 percent for cocaine, 17 percent for pot and 3 percent for heroin.").

²⁷ See Office of National Drug Control Policy, Facts & Figures: Methamphetamine [hereinafter ONDCP Facts & Figures], <http://www.whitehousedrugpolicy.gov/drugfact/methamphetamine/> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²⁸ See Office of National Drug Control Policy, Methamphetamine Fact Sheet [hereinafter ONDCP Methamphetamine Fact Sheet], http://www.whitehousedrugpolicy.gov/news/press05/meth_factsheet2.html (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²⁹ There are over 170 street terms for methamphetamine. Other slang terms include: black beauties, chalk, copilots, crack meth, crank, cristy, crystal, dexies, drivers, glass, go, go fast, hanyak, Hawaiian salt, hearts, hiropon, ice, kaksonjae, L.A. turnarounds, leapers, load of laundry, meth, pep pills, quartz, shabu, shi-shi, speed, spoosh, tick tick, thrusters, ups, uppers, wake ups, wire, and zip. See North Carolina Guidelines, *supra* note 18, at 5–6; Signe L. Levine, Note, *Poison in Our Own Backyards: What Minnesota Legislators Are Doing to Warn Property Purchasers of the Dangers of Former Clandestine Methamphetamine Labs*, 31 WM. MITCHELL L. REV. 1601, 1605 n.15 (2005); Vogt, *supra* note 2, at 253 n.6.

³⁰ See North Carolina Guidelines, *supra* note 18, at 5; ONDCP Methamphetamine Fact Sheet, *supra* note 28.

³¹ See ONDCP Facts & Figures, *supra* note 27.

rates (around five percent).³² In 2005, researchers estimated that 1.3 million Americans were addicted to methamphetamine.³³

Methamphetamine causes the brain to release large amounts of the neurotransmitters dopamine, norepinephrine, and serotonin. These chemicals affect the user's mood, causing her to experience heightened levels of pleasure while decreasing her appetite and perceived need for sleep.³⁴ The release of these chemicals causes the user to experience a brief rush of pleasure and an extended high, which can last for up to twelve hours.³⁵ Users report that the drug boosts confidence, makes them feel more alert, gives them energy, improves their mood, increases their sex drive, makes them feel more talkative, and erases feelings of boredom, loneliness, and timidity.³⁶

Physiologically, methamphetamine takes a harsh toll on the user's body. It increases the heart rate, blood pressure, temperature, and respiratory rate, while decreasing appetite, sleep, reaction time, and lung function.³⁷ Users have a heightened risk of complications such as stroke, cardiac valve sclerosis, pulmonary hyperextension, and anorexia.³⁸ Psychologically, users may experience confusion, lack of concentration, hallucinations, fatigue, memory loss, insomnia, irritability, paranoia, panic, depression, anger, and psychosis.³⁹ Long-term use may lead to brain damage, liver damage, strokes, coma, and death.⁴⁰

Methamphetamine is the most commonly synthesized controlled substance,⁴¹ and is the drug most commonly

³² See *Hearing—Bell Testimony*, *supra* note 8, at 54.

³³ See Press Release—Gordon Continues Fight, *supra* note 15.

³⁴ See ONDCP Methamphetamine Fact Sheet, *supra* note 28.

³⁵ See ONDCP Methamphetamine Fact Sheet, *supra* note 28.

³⁶ See ONDCP Methamphetamine Fact Sheet, *supra* note 28.

³⁷ See ONDCP Methamphetamine Fact Sheet, *supra* note 28.

³⁸ See ONDCP Methamphetamine Fact Sheet, *supra* note 28; ONDCP Facts & Figures, *supra* note 27.

³⁹ See ONDCP Methamphetamine Fact Sheet, *supra* note 28; ONDCP Facts & Figures, *supra* note 27.

⁴⁰ See ASTHO—Issue Brief, *supra* note 16, at 1.

⁴¹ See North Carolina Guidelines, *supra* note 18, at 5; Occupational and Environmental Epidemiology Branch, Department of Health and Human Services, Clandestine Methamphetamine Laboratories Information & Safety

manufactured in clandestine labs.⁴² Worldwide, ATSs (including methamphetamine) are used more frequently than any other controlled substance except marijuana.⁴³ In the United States, the number of methamphetamine lab “busts” has increased exponentially over the past ten years,⁴⁴ and has spread from

Sheet (2002) <http://www.epi.state.nc.us/epi/oii/pdf/methlab.pdf> (last visited Apr. 20, 2006) (“Methamphetamine is the most common illicit amphetamine; it is also the most commonly synthesized controlled substance.”) (on file with the North Carolina Journal of Law & Technology).

⁴² *Facing the Methamphetamine Problem in America: Hearing Before the Subcomm. on Criminal Justice, Drug Policy and Human Resources of the House Comm. on Government Reform*, 108th Cong. 55 (2003) [hereinafter *Hearing—Guevara Testimony*] (testimony of Rogelio E. Guevara, Chief of Operations, Drug Enforcement Administration), available at <http://www.usdoj.gov/dea/pubs/cngrtest/ct071803.htm> (last visited Apr. 20, 2006) (“[M]ethamphetamine has always been the primary drug manufactured in the vast majority of drug labs seized by law enforcement officers throughout the nation.”) (on file with the North Carolina Journal of Law & Technology); ONDCP Facts & Figures, *supra* note 27 (“Methamphetamine can easily be manufactured in clandestine laboratories using store bought materials and is the most prevalent synthetic drug manufactured in the United States.”); Levine, *supra* note 29, at 1605.

⁴³ *Comprehensively Combating Methamphetamine: Impact on Health and the Environment: Hearing Before the H. Comm. on Energy and Commerce, Subcomm. on Health and Subcomm. on Environment and Hazardous Materials*, 109th Cong. (2005) [hereinafter *Hearing—Rannazzisi Testimony*] (statement of Joseph T. Rannazzisi, Deputy Chief, Office of Enforcement Operations, Drug Enforcement Administration), available at <http://www.usdoj.gov/dea/speeches/sl02005.html> (last visited Apr. 20, 2006) (“Aside from marijuana, methamphetamine is the only widely abused illegal drug that is capable of easily being produced by the abuser. Given the relative ease with which manufacturers ‘cooks’ are able to acquire ‘recipes,’ ingredients, and the unsophisticated nature of the production process, it is not difficult to see why this highly addictive drug has spread across America.”) (on file with the North Carolina Journal of Law & Technology). According to the United Nation’s Office of Drugs and Crime, there are twice as many ATS users as heroin users, and three times as many as cocaine users. See ONDCP Methamphetamine Fact Sheet, *supra* note 28.

⁴⁴ See *Hearing—Martyny Testimony*, *supra* note 5, at 37 (“The explosion of these clandestine laboratories has occurred during the last 10 years and has been studied for even a shorter period.”). In 1990, police raided 277 meth labs in California. By 1998, the number had risen to over 1000. 147 CONG. REC. 53, S3892 (2001) (statement of Sen. Boxer). In 1993, the DEA had seized 218 meth labs. By 2004, there were nearly 16,000 labs operating in forty-nine states. Press Release—NMHC, *supra* note 5. Nationwide, law enforcement officers investigated or seized over 60,000 incidents related to methamphetamine

California throughout the entire country.⁴⁵ According to Captain Dave Neri, Commander of the Southern Arizona Counter Narcotics Alliance, “[m]eth is now listed as the greatest drug threat in the United States, [and is] leading to a greater number of problems in a shorter time frame than we’ve seen with any other drug.”⁴⁶

The drastic increase in use and production has caught many states, as well as the federal government, completely off guard. Within the last five years, the Southeast (including North Carolina) has experienced a major increase in methamphetamine lab seizures.⁴⁷ The rapid spread of this epidemic has outpaced the

production between 2001 and 2004. During this time, the number of incidents increased twenty-seven percent (from 13,551 to 17,154). ONDCP Methamphetamine Fact Sheet, *supra* note 28.

⁴⁵ In New York State, there were only four meth labs found between 1989 and 1999. In 2000, the number rose to eight, in 2001 to nineteen, in 2002 to forty-five, in 2003 to seventy-three. See *Hearing—Hamilton Testimony*, *supra* note 8, at 44. In Tennessee, only two lab seizures were reported in 1996. By 1999, the number had risen to 135, in 2002 to 500, in 2003 to 1154. See *Staff Report*, *supra* note 16, at 2. In 2004, Tennessee had 1259 lab incidents. See *Hearing—Bell Testimony*, *supra* note 8, at 54. Alabama, Delaware, Florida, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, and West Virginia have all reported increases in meth lab seizures over the past five years. See U.S. Drug Enforcement Administration, *State Facts Sheets*, http://www.usdoj.gov/dea/pubs/state_factsheets.html (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology). In North Carolina, meth lab discoveries have increased from thirty-four in 2001 to 322 in 2004. See *North Carolina Guidelines*, *supra* note 18, at 6. In Arizona, as well as fifteen other states, methamphetamine-related arrests have doubled since 2002. See Peter Busch, *Study Shows Methamphetamine #1 Drug Problem Nationwide*, KVOA Tucson, July 6, 2005, <http://kvoa.com/Global/story.asp?S=3559062 &nav=HMO5boS1> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology). In Washington State, the number of drug lab and drug lab dump site responses increased from sixty in 1995 to 1449 in 2000. Public Health—Seattle and King County, *Toxic Hazards: Methamphetamine Lab Cleanups*, <http://www.metrokc.gov/health/methlabs/#grant> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

⁴⁶ Busch, *supra* note 45. See also Brogan, *supra* note 6; Jefferson et al., *supra* note 26, at 41.

⁴⁷ See U.S. Drug Enforcement Administration, *State Facts Sheets*, http://www.usdoj.gov/dea/pubs/state_factsheets.html (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

ability of state legislatures and agencies ability to respond. As a result, state reactions to the multiple problems posed by methamphetamine (production, sale, use, site cleanup) have been erratic and disjointed.

*B. Production—If You Can Bake a Cake, You Can Cook Meth*⁴⁸

Production of methamphetamine involves a series of relatively simple chemical reactions. The level of sophistication required to create a potent batch of the drug can be acquired in a high school chemistry class.⁴⁹ Most of the chemicals and other required materials can either be easily obtained or derived from household chemicals.⁵⁰

There are approximately 150 different ways to manufacture methamphetamine,⁵¹ and around thirty-two chemicals can be used to make it.⁵² There are many recipes, some of which are accessible

⁴⁸ Hamilton, *supra* note 2, at 1A (“Anyone who can read can make meth A meth maxim is that anyone who can bake a cake can make meth. Unlike cocaine or heroin, a suburban 15-year-old can make it.”).

⁴⁹ ONDCP Methamphetamine Fact Sheet, *supra* note 28 (“Recipes are commonly available over the Internet and only high school level chemistry skills are required to make it.”).

⁵⁰ For example, the ephedrine or pseudoephedrine can be extracted from cold or allergy medicine such as Sudafed®. Sulfuric acid can be obtained from drain cleaner, and red phosphorus can be taken from match tips or road flares. Vogt, *supra* note 2, at 256. Other chemicals used in methamphetamine labs and their over-the-counter sources are: Acetone (fingernail polish remover), Acetic Acid (vinegar), Isopropyl Alcohol (rubbing alcohol), Anhydrous Ammonia (fertilizer), Benzene (dye, varnishes, lacquers), Ether (starter fluid, anesthetic), Ethyl Ether (computer dust-off), Ethyl Alcohol/Ethanol (grain alcohol), Freon (refrigerant, propellants), Hydrochloric/Muriatic Acid (concrete cleaner), Hydrogen Peroxide (antiseptic), Lithium Metal (batteries), Methyl Alcohol/Methanol (brake cleaner fluid, gasoline antifreeze), Methyl Ethyl Ketone (paint remover), Methyl Chloride (paint remover), Naptha (mineral spirits, paint thinner), Nitroethane (fuel additive), Petroleum spirits (camp fuel), Phosphoric Acid (fertilizer), Red Phosphorus (matches, road flares), Sodium Hydroxide (lye, drain cleaner, tile/grout cleaner), Sulfuric Acid (battery acid, drain cleaner), Toluene (brake cleaner fluid), Trichloroethane (gun scrubber, degreaser). North Carolina Guidelines, *supra* note 18, at 23.

⁵¹ See *Hearing*—Hamilton Testimony, *supra* note 8, at 44.

⁵² See H.R. REP. NO. 109-42, at 4 (2005) (“Of the 32 [sic] chemicals that can be used in varying combinations to make or ‘cook’ meth, one-third are

on the Internet.⁵³ Recipes typically involve the ingredients ephedrine hydrochloride and/or pseudoephedrine hydrochloride, which are available in many cold medicines.⁵⁴ The red phosphorus method (also known as the "Red P" method) and the Birch reduction (also known as the "Ammonia" or "Nazi" method) are most common.⁵⁵ The red phosphorus method involves reducing the ephedrine and pseudoephedrine with hydriodic acid and red phosphorus (obtained from match tips or road flares), whereas the Birch reduction uses lithium metal and anhydrous ammonia (a common ingredient found in fertilizer).⁵⁶

In either process, the resulting mixtures are combined with strong caustics, solvents and reactive metals to strip a hydroxyl group from the pseudoephedrine molecule.⁵⁷ After the reaction has

extremely toxic and many are reactive, flammable, and corrosive."); Methamphetamine Laboratories and Cleanup Fact Sheet, Division of Environmental Health, Illinois Department of Public Health <http://www.idph.state.il.us/envhealth/factsheets/meth-labs.htm> (last visited Apr. 20, 2006) ("Meth can be made using many different chemical processes. Most of these include the use of volatile organic compounds (VOCs), explosives, acids, bases, metals and chemical salts. Many steps are involved in making meth, and other harmful chemicals can be formed during the process. As a result, hundreds of different chemicals can contribute to the contamination of a property.") (on file with the North Carolina Journal of Law & Technology).

⁵³ A Google search for "methamphetamine recipe" produced 463,000 hits, many of which were simply websites asserting how easy it is to find meth recipes on the Internet. Many others discussed various aspects of meth production, but did not give a full recipe. One website linked to what was (hopefully) a hoax DEA website that claimed to log the user's IP address for federal monitoring. There were, however, a few websites that had what seemed to be step-by-step instructions for cooking meth. Usenet groups proved to be a more fruitful source of what appeared to be workable recipes. (Search conducted on Apr. 20, 2006.). See also *Hearing—Hamilton Testimony*, *supra* note 8, at 44.

⁵⁴ See North Carolina Guidelines, *supra* note 18, at 6.

⁵⁵ See *Hearing—Hamilton Testimony*, *supra* note 8, at 44; *Hearing—Martyny Testimony*, *supra* note 5, at 35–36; North Carolina Guidelines, *supra* note 18, at 6.

⁵⁶ See *Hearing—Hamilton Testimony*, *supra* note 8, at 44; *Hearing—Martyny Testimony*, *supra* note 5, at 35–36; North Carolina Guidelines, *supra* note 18, at 6.

⁵⁷ Robert D. Schmitter, Kevin C. Caravati & William R. Doyle, *Methamphetamine: Issues in Environmental Law and Management*, ST. B. OF

occurred, the methamphetamine is extracted from the solution by bubbling an acid gas (such as hydrochloric/muriatic acid) through the mixture. The methamphetamine precipitates (i.e., falls out of solution) from the mixture, settles in the bottom of the container, and is then filtered and dried.⁵⁸ It may seem complicated, but the process is actually quite simple and straightforward when stripped of the scientific jargon.

C. *Methamphetamine Labs: Mini-Superfund Sites*⁵⁹

There are two types of methamphetamine labs. Some labs are relatively large and well organized, and can put out in excess of ten pounds of product in a twenty-four hour period.⁶⁰ These labs are

GA. ENVTL. L. SEC. NEWSL. (State Bar of Georgia, Atlanta, GA), Summer 2005, at 3, available at <http://www.gabar.org/public/pdf/Sections/EnvironLaw/envsummer05news.pdf>. (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

⁵⁸ *Id.*

⁵⁹ M. Mindy Moretti, *Former Meth Labs Similar to "Mini-Superfund" Sites*, County News Online, National Association of Counties, Apr. 11, 2005, <http://www.naco.org/CountyNewsTemplate.cfm?Section=4-11-05&Template=/ContentManagement/ContentDisplay.cfm&ContentID=16951> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

⁶⁰ See *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 13 (2005) (statement of Rep. Ken Calvert, Member, House Comm. on Science) ("In my area of Riverside, California, methamphetamine production has reached epidemic proportions with many of these labs having the distinction of being labeled superlabs—these are labs that are capable of producing over ten pounds of finished methamphetamine per batch. One such lab which was seized in 2003 operated out of a barn in a rural area of Riverside County and produced over 6,000 pounds of finished product with a street resale value of over \$33 million dollars. Over 4 million pounds of contaminated toxic soil had to be removed with heavy equipment, costing in excess of \$226,000."); *Stopping the Methamphetamine Epidemic: Lessons from the Pacific Northwest: Hearing Before Subcomm. on Criminal Justice, Drug Policy and Human Resources of the H. Government Reform Comm.*, 109th Cong. (2005) [hereinafter *Hearing—Benson Testimony*] (statement of Rodney G. Benson, Special Agent in Charge, Seattle Field Division, Drug Enforcement Administration), available at <http://www.usdoj.gov/dea/pubs/cngrtest/ct101405.html> (last visited Apr. 20, 2006) ("Most of the methamphetamine found in the United States is produced by Mexico- and California-based Mexican traffickers. These drug trafficking

referred to as “superlabs.”⁶¹ The vast majority of superlabs are located in California and Mexico.⁶² They are often run by gang members from Mexico.⁶³ Other labs, referred to as “mom and pop” labs, “Beavis and Butthead” labs,⁶⁴ “small toxic labs,”⁶⁵ or “clandestine labs,”⁶⁶ are much smaller and more common.⁶⁷ They are very mobile and easily set up, and are often operated for personal use or low-level dealing rather than major trafficking operations.⁶⁸

organizations control ‘super labs’ (a laboratory capable of producing 10 pounds or more of methamphetamine within a production cycle) and produce the majority of methamphetamine available throughout the United States.”) (on file with the North Carolina Journal of Law & Technology); ONDCP Facts & Figures, *supra* note 27.

⁶¹ See *Hearing—Benson Testimony*, *supra* note 60; ONDCP Facts & Figures, *supra* note 27.

⁶² See *Hearing—Benson Testimony*, *supra* note 60; Levine, *supra* note 29, at 1608; ONDCP Facts & Figures, *supra* note 27 (“Clandestine laboratories in California and Mexico are the primary suppliers of methamphetamine in the United States.”). In 2003, seventy-seven percent of California meth lab busts were superlabs. H.R. REP. NO. 109–42, at 33 (2005) (statement of Rep. Costa).

⁶³ See *Hearing—Benson Testimony*, *supra* note 60; *Hearing—Rannazzisi Testimony*, *supra* note 43; ONDCP Methamphetamine Fact Sheet, *supra* note 28 (“Many of the superlabs found in the United States are operated by Mexican-national criminal gangs.”); ONDCP Facts & Figures, *supra* note 27 (“Outlaw motorcycle gangs and other independent laboratory operators were once the primary traffickers of methamphetamine in the United States. However, Mexico-based trafficking groups entered the illicit methamphetamine market in 1994 and now dominate the trade leaving motorcycle gangs with a small share of the market. Mexico based trafficking groups dominate the market for many reasons, including their ability to obtain large quantities of the chemicals needed to produce the drug, their access to established smuggling and distribution networks, and their control over ‘super labs’ . . .”).

⁶⁴ Schmitter et al., *supra* note 57, at 1.

⁶⁵ *Hearing—Benson Testimony*, *supra* note 60.

⁶⁶ *Hearing—Martyny Testimony*, *supra* note 5, at 35.

⁶⁷ See *The Methamphetamine Problem—A Question and Answer Guide*, Institute for Intergovernmental Research, <http://www.iir.com/centf/guide.htm> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

⁶⁸ See *Hearing—Benson Testimony*, *supra* note 60 (“The second source for methamphetamine in this country comes from small toxic labs (STL), which produce relatively small amounts of methamphetamine, and are not generally affiliated with major trafficking organizations.”); Busch, *supra* note 45

Superlabs tend to have more particular space and supply requirements due to the size of the operation, but “mom and pop” labs are pervasive.⁶⁹ Some labs, referred to as “box labs,” are completely portable.⁷⁰ A batch of meth can be cooked, from start to finish, in about eight hours.⁷¹ The short cooking time and the portability of small labs makes them particularly hazardous to unsuspecting bystanders.

Whereas superlab operations are, by necessity, usually more sophisticated and permanent, “mom and pop” labs are exactly the opposite. Safety precautions are often disregarded due to the operator’s intoxication or ignorance of the risks involved.⁷²

(“[A]gencies say meth can’t be targeted like other drugs because most of those who produce it in this country aren’t trying to traffic it. They’re just trying to cook up enough for their next fix. Which makes arresting and prosecuting them, more complicated.”).

⁶⁹ See *Hearing*—Hamilton Testimony, *supra* note 8, at 45 (“Labs, which can be located anywhere, from apartments and motel rooms to motor vehicles, can explode, endangering the lives of anyone in the lab, as well as those who may reside nearby.”); Stuart, *supra* note 8.

⁷⁰ *Hearing*—Howard Testimony, *supra* note 8, at 49 (“To further complicate the problem is the growing trend of mobile meth labs. Known as ‘box labs’, producers carry their cooking operations in luggage size containers, which allow them to cook their meth in cars, motel rooms, or in isolated, wooded areas in an effort to avoid detection.”); Hamilton, *supra* note 2 (“Meth labs are easily disassembled. ‘Box labs’ are small enough to fit into the back seat of a car or atop a toilet tank lid, said Sgt. Dennin Bauers of the Duluth Police Department’s narcotics unit.”).

⁷¹ Hamilton, *supra* note 2 (“With most labs, it takes about eight hours to set up, cook the product, dispose of the waste and take apart the lab, a 2002 DEA report says.”); McPherson, *supra* note 7, at K-04 (“Criminals can set up shop, make the drug and completely disassemble their cookers in a matter of hours.”).

⁷² See *Hearing*—Bell Testimony, *supra* note 8, at 56 (“Individuals entering a clandestine meth lab are in effect entering a working hazardous materials/chemistry laboratory, but one where few traditional safety measures have been in place. There are no fume hoods or air circulation mechanisms. There has been no routine clean-up protocol in place for spills.”); Staff Report, *supra* note 16, at 5 (“The production of methamphetamine is truly the work of a chemical production facility, but it is happening in a context . . . that lacks any of the protections that would normally keep the ‘workers,’ or others present during production, safe from the consequences of this chemical process.”); Hamilton, *supra* note 2 (“These are not the kinds of laboratories where scientists wear white coats and goggles and use state-of-the-art instruments. Recipes are

“Cooks,” the individuals who actually produce the drug—generally try to set up their mobile operations in remote or easily abandoned places because the cooking process produces such strong, unpleasant odors.⁷³ Labs have been discovered in rental houses, RVs, campers, horse trailers, barns, storage lockers, houseboats, tents, apartments, hotel rooms, abandoned buildings, greenhouses, sheds, car trunks, campgrounds, fields, and woods.⁷⁴ Many times, labs are only found when firefighters respond to an explosion.⁷⁵ Successful short-term labs escape detection altogether.⁷⁶

Meth labs create environmental hazards wherever they are operated. Most of the individual chemicals used for production are dangerous.⁷⁷ When combined, heated, and refined, the chemicals create additional toxic fumes and byproducts.⁷⁸ The fumes and

traded in jails and prisons . . . Any combination of sketchy recipes, intoxicated cooks, and flammable vapors can start a fire.”).

⁷³ See Levine, *supra* note 29, at 1608.

⁷⁴ See Levine, *supra* note 29, at 1608.

⁷⁵ Rodney Bowers, *Officer's Lungs Burned During Drug Raid—Week's Recovery Needed After Chemical Used to Make Methamphetamine Released*, ARK. DEMOCRAT-GAZETTE, Aug. 29, 2005 (“Nationally, law enforcement officials found 2304 meth labs from 2000 through May 20[, 2005] because the labs caught fire or exploded, according to the Drug Enforcement Administration.”); Hamilton, *supra* note 2, at A1 (“Any combination of sketchy recipes, intoxicated cooks, and flammable vapors can start a fire. . . . Between 25 percent and 40 percent of Minnesota meth labs are discovered exactly that way.”).

⁷⁶ McPherson, *supra* note 7, at K-04 (“The [methamphetamine] contamination may go undetected unless the drugmakers are busted.”).

⁷⁷ See *Hearing—Howard Testimony*, *supra* note 8, at 49 (“Most of the chemicals associated with producing meth can be grouped into 3 categories: Solvents; Metals and Salts; and Strong acids or Bases. Chemicals such as Starter Fluid; Muriatic Acid; Drain Cleaners; Lithium batteries; Iodine, and Acetone, to name a few, are commonly found in varying quantities.”); ONDCP Methamphetamine Fact Sheet, *supra* note 28 (“Many of the chemicals used to produce meth are highly volatile and extremely toxic, and can cause death or injury to the lab operators and their children, law enforcement officials who seize the labs, and first responders to lab explosions, and great harm to the environment. . . .”).

⁷⁸ See *Hearing—Howard Testimony*, *supra* note 8, at 49 (“The cooking process causes chemicals and methamphetamine to be deposited on surfaces and household belongings. Production also releases toxic gasses, including, but not limited to, hydrochloric acid, hydrogen chloride, phosphine, and ammonia.

compounds created during the cooking process can be extremely volatile, and explosions may result due to a lack of safety precautions or sophistication on the part of the cook.⁷⁹ After the cooking process, the messes left behind have been referred to as “toxic mini-waste dumps”⁸⁰ or “mini-superfund sites.”⁸¹

There are two general sites of environmental contamination: indoor and outdoor.⁸² The former affects the living space itself, while the latter refers to the effects of dumping and disposal of supplies and by-products. Indoors, the actual cooking location is generally the most contaminated area in a methfield site, and pollution tends to plume from that area. Labs have been found set up in living rooms and kitchens.⁸³ Chemicals may spill during the

These gasses are released during the cooking process and can be deadly.”); ONDCP Facts & Figures, *supra* note 27 (“Cooking a batch of meth can be very dangerous due to the fact that the chemicals used are volatile and the by-products are very toxic.”).

⁷⁹ See *Hearing—Hamilton Testimony*, *supra* note 8, at 45 (“‘Cookers,’ the people involved in making methamphetamine, may not know or care about the dangers of the substances which they are using.”).

⁸⁰ H.R. REP. NO. 109–42, at 15 (2005) (statement of Rep. Wu).

⁸¹ Moretti, *supra* note 59.

⁸² See *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 25–26 (2005) [hereinafter *Hearing—Green Testimony*] (statement of Sherry Green, Executive Director, National Alliance for Model State Drug Laws) (“State and local governments are working to address different aspects of the indoor and outdoor environmental issues associated with clandestine laboratories.”); *Hearing—Hamilton Testimony*, *supra* note 8, at 45 (“Environmental contamination may include indoor environments as well as outdoor environments such as soil, water supplies, septic systems, and air.”).

⁸³ See *Hearing—Howard Testimony*, *supra* note 8, at 48 (“Many of the labs that are found are being conducted right in the kitchen or basement of the home. Chemicals such as Muriatic Acid, Acetone, solvents, and ether have been found in the kitchens, bedrooms and living rooms of the defendants. Children of meth users have told stories of wearing masks while Daddy and Mommy ‘make stuff’ in the kitchen. Children have been found sleeping in bed or on couches while their parents make meth in another part of the house. One incident found that a wife and daughter were sleeping while her husband was making meth in the kitchen, during the process he mishandled one of the chemicals and a flash fire erupted, causing considerable damage to the residence and resulting in second degree burns to the husband. Equipment such as hypodermic needles,

meth cooking process,⁸⁴ and fumes permeate any porous surface with which they come into contact.⁸⁵ After the cooking process, when the methamphetamine is being dried, it turns into powder that often becomes airborne, covering every surface in the cooking area.⁸⁶ Heating and cooling systems may suck fumes and methamphetamine dust into the ductwork, thereby contaminating other rooms.⁸⁷

Once the cooking process is finished, the residual waste must be disposed. For every pound of meth produced, between five and

containers of anhydrous ammonia, solvents, and ether and [sic] are found [sic] kitchens, bedrooms and bathrooms of the homes.”).

⁸⁴ See *Hearing*—Hamilton Testimony, *supra* note 8, at 46 (“Other surfaces (e.g., furniture, counter tops, floors) can be contaminated by spills or emissions of chemicals during drug manufacture. The residues in these indoor environments can continually expose individuals until the contaminated surfaces are properly cleaned or the contaminated materials removed.”).

⁸⁵ See *Hearing*—Hamilton Testimony, *supra* note 8, at 46; Staff Report, *supra* note 16, at 5 (“Wherever methamphetamine is made, the area becomes contaminated with methamphetamine. It permeates wallboard, carpets, drapes, clothes and ventilation systems. The toxicity of the chemical production process is so great that brass fixtures in kitchens or lights begin to corrode.”); MRRR Background, *supra* note 19 (“Meth production produces toxic byproducts and residues that contaminate the premises. They are absorbed into building materials, such as carpet and wall board, and are distributed in the air.”); Colorado Department of Public Health and Environment, Support for Selection of a Cleanup Level for Methamphetamine at Clandestine Drug Laboratories 3–4 (Feb. 2005) [hereinafter Colorado Rationale], available at <http://www.cdph.state.co.us/hm/methlabcleanuplevelsupport.pdf> (last visited Apr. 20, 2006) (“The methamphetamine cooking process can release as much as 5500 micrograms of methamphetamine per cubic meter into the air, and deposit as much as 16,000 micrograms per 100 square centimeters onto surfaces.”) (citation omitted) (on file with the North Carolina Journal of Law & Technology); Illinois Department of Public Health, *supra* note 52 (“Some materials in a building can absorb chemicals. Examples include carpeting, wall board, ceiling tile, wood, and fabric. Furniture or draperies also may become contaminated.”); Stuart, *supra* note 8.

⁸⁶ See Staff Report, *supra* note 16, at 5 (“[M]ethamphetamine is a fine powder which is easily dispersed in the air.”).

⁸⁷ See Illinois Department of Public Health, *supra* note 52 (“If residues enter the heating, ventilation and air-conditioning system, other areas in a building can become contaminated.”); Stuart, *supra* note 8.

seven pounds of toxic byproduct are generated.⁸⁸ Much of this waste is dumped down drains in toilets, sinks, or bathtubs, or is simply poured onto the ground outside the lab.⁸⁹ In addition to contaminating and ruining plumbing systems, which may require repair or replacement, improper disposal of these byproducts results in contamination of soil, groundwater, and publicly-owned treatment works that receive wastewater.⁹⁰ Solid waste is

⁸⁸ See 151 CONG. REC. 160, E2534 (2005) (statement of Rep. Green) (“[E]ach pound of meth produced results in about six additional pounds of waste.”); METHFIELDS, *supra* note 14 (“Over five pounds of waste produced for every one pound of meth manufactured.”); Public Health—Seattle and King County, Toxic Hazards: Methamphetamine Lab Cleanups, <http://www.metrokc.gov/health/methlabs/#grant> (last visited Apr. 20, 2006) (“Every pound of methamphetamine produced generates five or more pounds of hazardous waste.”) (on file with the North Carolina Journal of Law & Technology); ASTHO—Issue Brief, *supra* note 16, at 2 (“For every pound of meth synthesized, more than six pounds of hazardous materials or chemicals are produced.”); Jenny Burns, *New Law Requires Homeowners to Cleanup Meth Contamination*, SHAWNEE NEWS-STAR, Sept. 4, 2003, http://www.news-star.com/stories/090403/New_52.shtml (last visited Apr. 20, 2006) (“For each pound of meth made . . . there can be five to seven pounds of toxic waste.”) (on file with the North Carolina Journal of Law & Technology).

⁸⁹ See *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. 19–21 (2005) [hereinafter *Hearing—Burns Testimony*] (statement of Scott Burns, Deputy Director for State and Local Affairs, Office of National Drug Control Policy) (“Small toxic labs contaminate the environment when methamphetamine cooks dump their toxic chemicals into the water table and onto farmland.”); *Hearing—Howard Testimony*, *supra* note 8, at 49 (“The solid waste product, referred to as ‘sludge’ and other remnants of the cooking process are routinely dumped down sinks, drains, and toilets, or discarded outside along roads or in yards, left to leach into the soil and ground water, leaving behind a virtual toxic dump of chemicals.”); MRRA Background, *supra* note 19 (“[C]ooks often pour leftovers down drains into nearby plumbing, storm drains and onto the ground, potentially contaminating the soil, water and septic systems.”).

⁹⁰ See *Hearing—Burns Testimony*, *supra* note 89, at 22; MRRA Background, *supra* note 19; Schmitter et al., *supra* note 57, at 3 (“The common ingredients [used to make meth] and their toxic combinations are often poured down drains or wells or dumped onto the ground in backyards, along roadways, in ditches, and in parks and greenspace. At larger methamphetamine ‘super labs,’ barrels of chemicals have been found as vast quantities of essential ingredients are used to increase daily production.”); Illinois Department of Public Health, *supra* note

sometimes burned to destroy evidence, which creates additional air, ground, and water pollution hazards.⁹¹

The pervasiveness of “mom and pop” meth labs, coupled with the reckless production and disposal methods, creates dangers for several groups of people. The cooks themselves are at an acute risk because of their proximity to the concentrated source of chemicals and fumes.⁹² Often, children live at residential meth lab locations.⁹³ There is a particular concern for the negative health

52 (“Soil or groundwater may become contaminated if chemicals are disposed of in a septic system or dumped outside.”).

⁹¹ See *Hearing*—Howard Testimony, *supra* note 8, at 48–49; North Carolina Guidelines, *supra* note 18, at 15 (“‘Cooks’ in meth labs often burn or dump solid wastes outside the structure. Most liquid chemical by-products are dumped into bathtubs, sinks, drains and toilets.”).

⁹² See *Hearing*—Burns Testimony, *supra* note 89, at 22 (“[T]hese labs create life-threatening hazards, such as explosion or chemical toxicity, which harms not only the people cooking methamphetamine, but first responders, who try to save lives by entering burning and contaminated sites.”); *Hearing*—Martyny Testimony, *supra* note 5, at 37 (“It is almost a given that . . . [t]he cook and anyone assisting the cook will be exposed to a number of chemicals (phosphine, hydrogen chloride, iodine, anhydrous ammonia, and solvents) at levels that are above those allowed by law in occupational settings and, in some cases, above those levels determined to be ‘immediately dangerous to life and health.’”); ASTHO—Issue Brief, *supra* note 16, at 2 (“Cooking meth threatens the health and safety of the meth cooker, individuals living at the lab site, the community surrounding the lab, and law enforcement officials responsible for investigating suspected labs.”); ONDCP Methamphetamine Fact Sheet, *supra* note 28.

⁹³ See *Hearing*—Bell Testimony, *supra* note 8, at 55; *Hearing*—Burns Testimony, *supra* note 89, at 22 (“[C]hildren in and around STLs (small toxic labs) are harmed by the toxic chemicals used in the methamphetamine manufacturing process.”); *Hearing*—Howard Testimony, *supra* note 8, at 49 (“In rural areas garbage from the process is often taken outside into the yard and burn [sic] in piles to [sic] in an effort to destroy any of the evidence.”); *Hearing*—Martyny Testimony, *supra* note 5, at 35 (“Chief among [the concerns about exposures of third party individuals to meth labs] was the health and well being of the children associated with these laboratories. Approximately one-third of the methamphetamine laboratories investigated by law enforcement involve children. In addition, there have been instances of families unknowingly moving into a building that had previously been a methamphetamine laboratory. The occurrence of a clandestine ‘cook’ was only evident after significant lung problems were diagnosed in the children.”); ASTHO—Issue Brief, *supra* note 16, at 1 (“During 2002, more than 2,000 children were reported living in a house or apartment with a meth lab; 1,300

effects suffered by children, because they have lower body weights than adults and their respiratory systems are still developing.⁹⁴ Whenever a meth lab explodes, catches fire, or is reported, first responders are exposed to fumes and chemical residue.⁹⁵

were exposed to toxic chemicals; 26 were injured; and two were killed.”); ONDCP Methamphetamine Fact Sheet, *supra* note 28.

⁹⁴ See Staff Report, *supra* note 16, at 6 (“The typical ancillary victims of meth production are children. Those children may live for many months, potentially even years, breathing dangerous fumes and dust day in and day out . . . There is . . . a question about the impact of the chemicals involved in meth production on the developing physiology of a child.”); ASTHO—Issue Brief, *supra* note 16, at 1–2 (“Children are more likely to be adversely affected by toxic chemicals emitted during the production process because their nervous and reproductive systems, as well as numerous organs, are still developing.”); Colorado Rationale, *supra* note 85, at 3 (“Children are often more susceptible to hazards due to their physiologic status (rapid growth, incomplete development, and rapid metabolism requiring more air and water per body weight than adults) and behaviors (crawling, hand to mouth activity, gnawing on furniture, window sills, toys).”).

⁹⁵ See *Hearing—Burns Testimony*, *supra* note 89, at 22 (“[T]hese labs create life-threatening hazards, such as explosion or chemical toxicity, which harms not only the people cooking methamphetamine, but first responders, who try to save lives by entering burning and contaminated sites.”); *Hearing—Martyny Testimony*, *supra* note 5, at 37 (“Law enforcement, fire, and emergency services personnel may be exposed to high levels of these chemicals as they investigate clandestine methamphetamine laboratories. This is especially true if they enter an area where a laboratory is in operation but also may be true if the laboratory is not in operation at the time. Residual chemicals deposited on surfaces of the house as well as boxes of chemicals stored in the house may result in significant exposures to investigating personnel.”); Staff Report, *supra* note 16, at 6 (“First responders walk into an operating lab with the intentions of providing some assistance to residents only to find that they are breathing meth particulate and a witch’s brew of chemicals from production. The short-term consequences of that exposure may be a burning sensation in the lungs and shortness of breath. The longer-term consequences are not understood.”); ASTHO—Issue Brief, *supra* note 16, at 1; ONDCP Facts & Figures, *supra* note 27 (“Meth labs present a danger to the meth cook, the community surrounding the lab, and the law enforcement personnel who discover the lab. A Center for Disease Control and Prevention study on hazardous substance-release events found that methamphetamine labs caused injury to 79 first responders (police officers, firefighters, EMTs, and hospital personnel) in 14 States participating in the study. The most common injuries were respiratory and eye irritation; headache; dizziness; nausea and vomiting; and shortness of breath.”). See Bowers, *supra* note 75 (describing a law enforcement officer who suffered burned lungs after

Neighbors to meth labs are also put at risk, particularly when the lab is located in an apartment or motel room. Shared vents and ductwork may expose them to fumes during and after the cooking process and carry contaminants into their living space.⁹⁶ Also, explosions or fires in communal living environments jeopardize the safety of all tenants.⁹⁷ Finally, new tenants of former lab sites are at risk of exposure to residual chemicals⁹⁸ because they live in an area where the actual cooking occurred.⁹⁹

inhaling anhydrous ammonia); Brogan, *supra* note 6 (“Firefighters usually don’t know what they’re facing when they respond to a meth-related fire. . . . That’s what makes it so dangerous.”); Hamilton, *supra* note 2 (“[A]n unrecorded number of Minnesota police, health, social service and other agency workers have collapsed or become ill at meth lab sites. One Northeastern Minnesota law enforcement officer permanently lost half his lung capacity after helping to seize a local meth lab.”); Transcript of *CNN Live Today* (CNN television broadcast Jul. 6, 2005) (discussing a Wautaga County, North Carolina, firefighter responding to a meth lab fire who suffered burns to the mouth, nostrils, nasal cavity, windpipe, and esophagus, resulting in a loss of fifty percent of his lung capacity).

⁹⁶ See *Hearing*—Hamilton Testimony, *supra* note 8, at 45 (“Labs, which can be located anywhere, from apartments and motel rooms to motor vehicles, can explode, endangering the lives of anyone in the lab, as well as those who may reside nearby. This can pose a particularly dangerous threat to children living in or near these labs.”).

⁹⁷ See *Hearing*—Hamilton Testimony, *supra* note 8, at 45; North Carolina Guidelines, *supra* note 18, at 6 (“Several law enforcement lab closures (busts) have required neighborhoods to be evacuated due to the dangers associated with the labs.”); Brogan, *supra* note 6 (“[A] methamphetamine lab . . . exploded in the bathroom of an apartment, severely burning two men police said were making meth when the chemicals they were mixing caught fire. Witnesses said fireballs shot through every window of the apartment. ‘I just thought maybe they were being loud,’ said building resident Erica Wickett. ‘Then the apartment filled with smoke. I could barely breathe.’ Twenty four apartment building residents were evacuated for three hours.”).

⁹⁸ See *Hearing*—Martyny Testimony, *supra* note 5, at 37 (“Our studies indicate that methamphetamine production and use will have far-reaching effects upon the individuals using this drug, their children, others in the vicinity, and even individuals moving into the ‘cook’ areas well after the cook has moved on to another area. It is unlike the use of many drugs in that there is not only an exposure to the drug itself, but also to the hazardous and toxic chemicals used for the drug’s production.”); *Methamphetamine Remediation Research Act of 2005: Hearing on H.R. 798 Before the H. Comm. on Science*, 109th Cong. (2005) [hereinafter *Hearing*—NMHC Testimony] (statement of the National

III. SETTING STANDARDS AND CLEANING UP LABS

The public health risks involved with different methfields vary substantially.¹⁰⁰ Many factors contribute to the degree of toxicity at a particular location, including: the types of chemicals used during the cooking process, the length of time a site was used for

Multi Housing Council and National Apartment Association), *available at* <http://www.nmhc.org/Content/ServeFile.cfm?FileID=4553> (last visited Apr. 20, 2006) (“In addition to the risk of fire and explosion, these labs may pose a proximal health hazard to current and future residents . . . [M]eth-chemicals . . . may remain in a structure or its environs following the abandonment of an illegal laboratory or in the wake of the consumption of these drugs on a property.”) (on file with the North Carolina Journal of Law & Technology); Staff Report, *supra* note 16, at 7 (“The consequence is that the next inhabitants of the house, apartment, trailer or motel room will be exposed to the lingering markers of chemical production as well as to trace amounts of meth itself There is no understanding of the potential health consequences of such exposure and, especially if the residents don’t know that the property has been contaminated, the people involved may not even know what to watch for in terms of health concerns.”); Press Release, Comm. on Science, Democratic Caucus, Gordon Methamphetamine Act Passes House (Dec. 13, 2005) [hereinafter Press Release—Gordon Methamphetamine Act Passes House], *available at* <http://sciencedems.house.gov/press/PRArticle.aspx?NewsID=161> (last visited Apr. 20, 2006).

⁹⁹ See *Hearing*—Martyny Testimony, *supra* note 5, at 37 (“The area used to produce methamphetamine and surrounding areas will be contaminated with a number of chemicals including hydrogen chloride, iodine, solvents, and the methamphetamine itself. Levels of these compounds may remain in the area for an extended period of time (at least 6 months) and may result in exposures to individuals that were not associated with the ‘cook’ and, in fact, never knew of the existence of the methamphetamine production.”); *Hearing*—NMHC Testimony, *supra* note 98 (“[Meth] labs pose a health and safety threat long after drug production ceases, due to the presence of hazardous manufacturing byproducts and residual production chemicals.”); Staff Report, *supra* note 16, at 7; Press Release—Gordon Methamphetamine Act Passes House, *supra* note 98 (“People move into former meth labs—often common residential settings like single-family homes and apartments—never knowing of their previous use. Instead of finding a safe living environment, residents find what amounts to a chemical waste dump. . . . ‘Simple household ingredients used in meth production leave behind dangerous and hidden toxins. These residual substances affect families reinhabiting homes . . . exposing them to potentially devastating long-term affects [sic].”).

¹⁰⁰ See Vogt, *supra* note 2, at 263.

manufacture, the amount of product manufactured, the disposal methods chosen by the cooks, and the amount of ventilation available in the structure.¹⁰¹

Likewise, individuals are affected in different ways and to varying degrees by exposure to former methfields. A person's reaction depends on the level of contamination, length of exposure, the age of the exposed individual, overall health condition, and any acute susceptibilities (such as asthma or other respiratory problems).¹⁰² The number of variables involved, combined with the relative lack of data on the subject, presents challenges at both the state and federal level with regard to setting standards for cleanup and remediation.

A. State Response—Overworked, Understaffed, Under-Funded

The rapid increase in methamphetamine use and production nationwide caught many states off guard. While the federal government provides some assistance in this area, as will be discussed below, the bulk of responsibility has fallen on state and local law enforcement.¹⁰³ Unfortunately, the technology in place does not effectively and quickly detect methamphetamine and precursor chemicals in the field.¹⁰⁴ Current tests only detect the presence of methamphetamine and must be sent to labs for analysis, which delays the criminal investigation as well as the cleanup.¹⁰⁵ Additionally, law enforcement officers are often required to guard meth labs until contractors arrive to remove the debris, wasting time and manpower, potentially increasing the

¹⁰¹ Jefferey L. Burgess, Methamphetamine Labs Community Risks and Public Health Responses, 15 WASH. PUB. HEALTH (Fall 1997), *available at* <https://dev.hsl.washington.edu/nwcphp/wph97/methlab.html> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology); Vogt, *supra* note 2, at 263.

¹⁰² Colorado Rationale, *supra* note 85, at 2.

¹⁰³ See *Hearing*—Murtha Testimony, *supra* note 20, at 3–4.

¹⁰⁴ Staff Report, *supra* note 16, at 4–5.

¹⁰⁵ Staff Report, *supra* note 16, at 5 (“[I]n the entire state of Tennessee, only the Nashville crime lab is certified and capable of reliably testing for ephedrine, pseudoephedrine, and methamphetamines. It has no ability to test for other elements involved in the production of methamphetamines . . .”).

officers' exposure to toxins.¹⁰⁶ Finally, once contamination has been detected, there are inadequate standards in place to determine whether a methfield site has been decontaminated.¹⁰⁷

Even state agencies acting under elaborate guidelines for cleanup face challenges with setting acceptable residual levels for contaminants. Current standards are based on technological feasibility, not on health and safety requirements.¹⁰⁸ There is a general consensus that the long-term health effects of these chemicals are unknown, and that acceptable exposure levels have yet to be established for many of the chemicals involved in meth production.¹⁰⁹

¹⁰⁶ Staff Report, *supra* note 16, at 4–5 (“A hidden cost of such clean-ups resides in the necessity to assign officers to guard a site, round-the-clock, until a contractor can arrive to do the clean-up. For small jurisdictions with limited police personnel, such assignments can be onerous and expensive.”); Burns, *supra* note 88 (“After making arrests and collecting evidence, an officer must wait at the site at a meth lab for a private firm to haul off the dangerous chemicals. On a busy night, that wait can stretch from 8 to 20 hours.”).

¹⁰⁷ Staff Report, *supra* note 16, at 8–9 (“Even if a clean-up is undertaken, it is not clear ‘how clean is clean.’ . . . [T]here are no health-based standards for what constitutes ‘clean’ from contamination of methamphetamine itself or for the combinations of ‘brewing’ chemicals that are specific to meth production. Without such a standard it is impossible to determine what is clean and safe after a property has been used as a meth production facility.”).

¹⁰⁸ See *Hearing—Green Testimony*, *supra* note 82, at 28–29 (“Currently, approximately seven states have established—by statute, regulation or guideline—a feasibility-based decontamination standard specific to methamphetamine. Feasibility-based is a cost-comparative term used to determine what the economics are of cleaning a meth lab; simply put, ‘how much do we want to spend to clean it up?’”); Colorado Rationale, *supra* note 85, at 1 (“Health-based values could not be established due to deficiencies in the toxicity database. These current meth cleanup levels are instead based on what is believed to be conservative and protective, while at the same time achievable by clean-up contractors.”); Washington State Rationale, *supra* note 17, at 5 (“DOH chose to adopt a feasibility-based approach when establishing the current methamphetamine standard. This approach was based on the following primary considerations: 1. Analytical limitations and; 2. A cleanup level to which methamphetamine could reasonably be achieved.”).

¹⁰⁹ See *Hearing—Green Testimony*, *supra* note 82, at 29 (“Because research into the long-term health effects associated with clandestine laboratories has just recently begun, health or risk based standards have not been determined yet. These standards are usually determined by asking, ‘to what level do we need to

Without health-based standards, states have little choice but to require the lowest levels of contamination achievable using current technology, also known as “technology-based” or “feasibility-based” standards.¹¹⁰ To date, eight states (Alaska, Arizona, Arkansas, Colorado, Minnesota, Oregon, Tennessee, and Washington) have established a technology-based cleanup standard for methamphetamine.¹¹¹ There is an ongoing debate about the efficacy of technology-based approaches because of their imprecision in protecting public health.¹¹² These approaches either require too little remediation to protect the public from adverse health effects,¹¹³ or require too much remediation, which unnecessarily increases the cost to property owners without achieving any additional benefit.¹¹⁴ If the technology is inadequate

minimize (clean) a contaminant in order to prevent the average person from having adverse health effects (e.g., become sick)?” This is based upon the toxicology of a compound, the concentration of the contaminant, and the amount of time a person will be exposed to that concentration.”); Staff Report, *supra* note 16, at 7 (“[T]here is no understanding of the potential health consequences of [exposure to the lingering markers of chemical production as well as to trace amounts of meth itself.]”); Washington State Rationale, *supra* note 17, at 3 (“Studies on the health effects associated with chronic exposures to low concentrations of methamphetamine are not available.”); Division of Environmental Health, Washington State Department of Health, Illegal Methamphetamine Labs Fact Sheet, <http://www.doh.wa.gov/ehp/ts/CDL/meth-fs.pdf> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹¹⁰ See *Hearing—Green Testimony*, *supra* note 82, at 28–29.

¹¹¹ See *Hearing—Green Testimony*, *supra* note 82, at 29. See also Colorado Rationale, *supra* note 85, at 4.

¹¹² See *Hearing—Green Testimony*, *supra* note 82, at 29. See also Colorado Rationale, *supra* note 85, at 1 (“Although numerous states have adopted these detection based cleanup standards for methamphetamine, none have tried to correlate these levels to known health-effect-based concentrations Analytical methods are constantly being refined and detection limits lowered. Simply setting a cleanup standard based on the current detection limit does not provide information on potential health effects.”).

¹¹³ See Colorado Rationale, *supra* note 85, at 4.

¹¹⁴ See H.R. REP. NO. 109–42, at 9 (2005) (“The Committee is concerned that excessive remediation costs could result in the site being left untreated.”); Staff Report, *supra* note 16, at 8–9 (“Without state laws requiring remediation, and some mechanism to enforce that step, it remains up to the goodwill, intelligence and deep pockets of property owners to remediate their own property EPA

to protect public health, even the most stringent cleanup standards will not have the required effect. If the standards are made too stringent to account for uncertainty, they may overcompensate, and the increased costs may discourage property owners from voluntary disclosure and cleanup.¹¹⁵ Finally, the guidelines that do exist vary widely from state to state. The lack of information consolidation and transfer has potentially stunted the response of recently impacted states.¹¹⁶ As a result, some state policies—including North Carolina's—amount to little more in practice than “air it out, wash the walls, paint everything, and replace the carpet.”¹¹⁷

Over the past couple of years, several states have focused on passing legislation to address the epidemic by limiting access to the cold medicines crucial to meth production¹¹⁸ and by requiring that renters and purchasers to be notified if a particular property was used for meth production.¹¹⁹ Some states have also developed

clean-up standards, absent some public funds to cover the costs of that clean-up, will probably only encourage owners to do less diligent work to clean-up their properties than they do currently.”).

¹¹⁵ See Staff Report, *supra* note 16, at 8.

¹¹⁶ MRRA Background, *supra* note 19 (“States are at various stages in their attempts to address cleanup and remediation challenges. Some have a state standard, defined in parts per billion, for what is clean. Others only have guidelines, which range from ventilation and the removal of gross contaminants to the removal of drywall and other furnishings. Not much is known about the effectiveness of remediation techniques. Where standards exist, they are based on what is achievable, not human health.”).

¹¹⁷ See North Carolina Guidelines, *supra* note 18, at 18–19. Although the North Carolina guidelines are not literally this simplistic (and are substantially longer), they do not provide much substantive guidance on the actual cleanup process beyond what is suggested above. The North Carolina Administrative Code sections that the guidelines were drafted to explain are similarly cryptic. See 10A N.C. ADMIN. CODE 41D.0101–0104 (2005).

¹¹⁸ Press Release—Gordon Methamphetamine Act Passes House, *supra* note 98 (“The National Alliance for Model State Drug Laws notes that thirty-four states passed some form of point-of-sale restriction in their current legislative sessions on medicines often used in the production of methamphetamine.”).

¹¹⁹ See Hearing—Green Testimony, *supra* note 82, at 29 (“Numerous states have become concerned with presently or formerly contaminated properties being sold, transferred, or rented without the buyer or occupant being made aware of the status of the property. Such disclosure issues and restriction on the

cleanup standards to remediate methfields, but the requirements and specificity vary widely among programs, as do acceptable residual levels of the toxins.¹²⁰ Most states that require meth detection levels to be below a certain point do not address the many precursor chemicals involved in production.¹²¹ Some states require cleanup by state certified professionals, while others, including North Carolina,¹²² let owners handle it if they desire.¹²³

transfer of the property have been addressed in many different areas of the state code. Arizona, Alaska, and Oregon, in particular, address this issue within the purview of their cleanup laws and regulations. The statutes and/or regulations generally require the seller to notify the buyer in writing that illegal drug manufacturing occurred on the premises. A buyer then may cancel the purchase contract within a certain number of days after receiving notice of the property's status."); *see also* Levine, *supra* note 29, at 1601.

¹²⁰ *See Hearing—Green Testimony, supra* note 82, at 28–29; *Hearing—NMHC Testimony, supra* note 98 (“[S]everal states have enacted mandatory cleanup statutes; however, there are no federal guidelines or standards addressing remediation of meth-contaminated properties and, with few exceptions, even the states with mandatory clean-up laws have failed to define levels of contamination and appropriate abatement methods.”); Staff Report, *supra* note 16, at 1 (“The Federal government has yet to develop a broad integrated strategy for how to respond to methamphetamine and states are dealing with this emerging epidemic in an uneven manner.”). *See also* Colorado Rationale, *supra* note 85, at 1, 4–5.

¹²¹ *See Hearing—Green Testimony, supra* note 82, at 28; *Hearing—NMHC Testimony, supra* note 98 (“The lack of scientific evidence or national property remediation standards has resulted in widely-divergent state-required cleanup practices and requirements. Currently, ‘safe’ meth contamination levels range from 0.5 ug/ft² to .05 ug/100cm². Additionally, some states’ standards only address the residual methamphetamine level itself, while others establish acceptable levels for meth-related chemicals such as mercury, lead, volatile organic chemicals and corrosives. Finally, some states require cleanup to be completed by a state licensed or otherwise certified remediation professional, while others do not.”).

¹²² *See* North Carolina Guidelines, *supra* note 18, at 12 (“Although the responsible party may perform the pre-decontamination assessment, he/she may choose to hire contractors experienced in hazardous chemical cleanups (*see* Appendix B for suggested qualifications).”).

¹²³ *See* North Carolina Guidelines, *supra* note 18, at 18–19 (“[T]he responsible party may perform the decontamination, or the responsible party may choose to have decontamination performed by persons who have completed hazardous materials training and are experienced in hazardous chemical cleanups.”). *See also* *Hearing—Green Testimony, supra* note 82, at 28;

Only three states—Washington, Oregon and Arizona—have written statutes and/or regulations that contractors must follow in order to become certified.¹²⁴

Additionally, while many states require disclosure of former methfield sites to potential buyers and new tenants, the practice is not universal.¹²⁵ The health implications of the many different chemicals and compounds created during the cooking process are unknown, which means that there is no consensus on acceptable health-based levels of chemical residue.¹²⁶ Even if levels were agreed upon, there are currently no remediation guidelines capable of achieving them.¹²⁷

West coast states such as Oregon and Washington are widely considered to have the most comprehensive standards and guidelines for response and remediation in the country. This is largely because they were the first states to be affected by the

Hearing—NMHC Testimony, *supra* note 98 (“[S]ome states require cleanup to be completed by a state licensed or otherwise certified remediation professional, while others do not.”).

¹²⁴ See *Hearing*—Green Testimony, *supra* note 82, at 28.

¹²⁵ Compare *Hearing*—Green Testimony, *supra* note 82, at 28 (“Alaska, Arizona, and Oregon, in particular, address [disclosure issues] within the purview of their cleanup laws and regulations”) with Levine, *supra* note 29, at 1615–16 (“There is currently no Minnesota law that specifically provides property buyers protection in the form of mandatory disclosure of clandestine drug labs or in the form of land record notification.”).

¹²⁶ See *Hearing*—Martyny Testimony, *supra* note 5, at 37 (“At this time we do not have much information on the long-lasting health effects caused by exposure to clandestine methamphetamine laboratories. This may seem like information that is easily obtainable, but several factors have limited our knowledge in this area. The explosion of these clandestine laboratories has occurred during the last 10 years and has been studied for even a shorter period.”).

¹²⁷ MRRRA Background, *supra* note 19 (“States are at various stages in their attempts to address cleanup and remediation challenges. Some have a state standard, defined in parts per billion, for what is clean. Others only have guidelines, which range from ventilation and the removal of gross contaminants to the removal of drywall and other furnishings. Not much is known about the effectiveness of remediation techniques. Where standards exist, they are based on what is achievable, not human health.”).

methamphetamine problem after it migrate up from California.¹²⁸ Washington set its minimum acceptable levels for methamphetamine, volatile organic compounds (precursors to ozone, also referred to as "VOCs"), mercury, and lead well below levels currently recognized as safe.¹²⁹ Even though the determinations were technology- or feasibility-based, the extremely low levels probably protect against most potential health risks.¹³⁰ The Washington State Department of Health justified these low levels on the grounds that, because there are no health-based standards, overly conservative estimates were necessary.¹³¹

¹²⁸ See *Hearing—Benson Testimony*, *supra* note 60; Vogt, *supra* note 2, at 268–69.

¹²⁹ For methamphetamine, the Washington standard is fifty times lower than the lowest reference dose in the February 2005 report released by the Colorado Department of Public Health. The VOC standard was one part per million, which is the lowest detectable concentration. The lead standard was set at half the U.S. Department of Housing and Urban Development's current floor wipe clearance standard and half of the EPA's lead hazard standard. The mercury standard was set at the lowest measurable amount, which exceeds existing state and federal health-based screening levels. See Washington State Rationale, *supra* note 17, at 4–7. See also Colorado Rationale, *supra* note 85, at 3 ("[Existing methamphetamine cleanup standards] are not health-based, but are rather based on analytical detection limits. Health-based values could not be established due to deficiencies in the toxicity database. These current meth cleanup levels are instead based on what is believed to be conservative and protective, while at the same time achievable by clean-up contractors.").

¹³⁰ See Washington State Rationale, *supra* note 17, at 5 ("[T]he current Washington State methamphetamine decontamination standard appears to be well below levels that would be expected to cause adverse noncancer health effects . . ."). See also Colorado Rationale, *supra* note 85, at 1; Matt Wagner, *Who Cleans Up the Meth?*, SPRINGFIELD NEWS-LEADER, Mar. 13, 2005, at 1A, available at <http://springfield.news-leader.com/specialreports/meth/20050313-Whocleansupthem.html> (last visited Apr. 20, 2006) ("[Dr. John Martyny, an industrial hygienist and associate professor at National Jewish Medical and Research Center in Denver] admits that testing limits imposed by some states may not be health-based, but he said they represent an achievable standard of cleanliness. 'If you get to those levels, it seems like you will have removed everything else, too. People do fine moving in there.'") (on file with the North Carolina Journal of Law & Technology).

¹³¹ See Washington State Rationale, *supra* note 17, at 5–7 ("The current Washington State methamphetamine decontamination standard appears to be well below levels that would be expected to cause adverse noncancer health effects[;]" with regard to lead, "DOH believed it was prudent to establish a

Where small amounts of toxins can cause serious health effects, it is better to err on the side of caution. On the other hand, Washington's overly stringent regulations may be criticized for unnecessarily boosting costs without ensuring adequate protection. After all, if a cleanup fails to protect the public from harm, it is arguably not worth the effort or the cost of implementation.

Unfortunately, even the most thorough standards in the nation are still not very comprehensive. Washington's guidelines only deal with four chemicals: (1) methamphetamine, (2) VOCs, (3) lead (which is rarely used anymore in meth production), and (4) mercury (which is also seldom used).¹³² Even the best standards in the country fail to regulate dozens of the dangerous chemicals and compounds that are potentially present at a methfield site.

The Midwest is home to the second wave of the methamphetamine problem.¹³³ Although originally relegated to rural areas, the problem has moved into more populated cities.¹³⁴ Deborah Durkin of the Minnesota Department of Health compares the spread of meth to a brush fire, stating that "[w]e have had smoldering activity for a long time [on the West Coast and in rural areas throughout the Midwest,] and we are really just now reaching that peak where the problem moves from rural saturation to increased numbers in our big cities."¹³⁵ States in the Southeast, the most recently affected region of the country, have experienced a profound surge in meth production over the past few years.¹³⁶ These states have been required to develop policies and responses very quickly to attempt to address the problem.

lower lead wipe standard than the current HUD and EPA standards[;]" with regard to mercury, "DOH chose to use the lowest measurable amount using standard sampling and analytical methods[.]" See also Colorado Rationale, *supra* note 85, at 1.

¹³² Washington State Rationale, *supra* note 17, at 3.

¹³³ See *Hearing—Bell Testimony*, *supra* note 8, at 54 ("[Meth] ravaged Pacific and Northwestern states for a long time and more recently infected the Midwest. After moving into Middle Tennessee, in the past 10 years in particular, it has flourished in small labs in rural communities where detection is difficult."); ASTHO—Issue Brief, *supra* note 16, at 1.

¹³⁴ ASTHO—Issue Brief, *supra* note 16, at 1.

¹³⁵ ASTHO—Issue Brief, *supra* note 16, at 1.

¹³⁶ See *Hearing—Bell Testimony*, *supra* note 8, at 54.

B. Federal Response—Go Ahead, We'll Be Here If You Need Us

Federal methamphetamine policy has been implemented most prominently by the Drug Enforcement Administration ("DEA"), which deals with law enforcement issues, and the Environmental Protection Agency ("EPA"), which deals with chemical and environmental issues.¹³⁷ In both arenas, the federal government has been a relatively minor player as compared to the states.¹³⁸ This is particularly true for methfield remediation.¹³⁹ Even though two very broad-sweeping pieces of legislation—the Resource Conservation and Recovery Act ("RCRA")¹⁴⁰ and the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA")¹⁴¹—give the EPA authority to play a much larger role in assisting states with the problem, at present, no federal standards provide any guidance for the remediation of former methamphetamine laboratories.¹⁴² Although RCRA and CERCLA both apply to methfield cleanup and have been invoked in situations involving the cleanup and prosecution of superlabs, in practice they offer very little guidance or support to states for "mom and pop" sites.¹⁴³

1. RCRA—From the Cradle to the Grave (Hypothetically)

RCRA,¹⁴⁴ which was originally passed by Congress in 1976, gives the EPA authority to control hazardous waste at every level

¹³⁷ MRRA Background, *supra* note 19 ("EPA responds when the threat is 'imminent and substantial'—the trigger under Superfund—but most small labs don't rise to this level. DEA handles the bulk of the cleanup at the federal level, but this involves securing evidence and the removal of gross contamination, not the remediation of residual chemicals.").

¹³⁸ See *Hearing—Murtha Testimony*, *supra* note 20, at 3–4.

¹³⁹ See *Hearing—Murtha Testimony*, *supra* note 20, at 3–4.

¹⁴⁰ 42 U.S.C. §§ 6901 et seq. (2000).

¹⁴¹ 42 U.S.C. §§ 9601 et seq. (2000).

¹⁴² MRRA Background, *supra* note 19 ("There are no federal guidelines or standards for the remediation of former methamphetamine laboratories.").

¹⁴³ Vogt, *supra* note 2, at 266.

¹⁴⁴ 42 U.S.C. §§ 6901 et seq. (2000).

of production; in other words, from the “cradle to the grave.”¹⁴⁵ RCRA covers the generation, transportation, storage, and disposal of hazardous waste.¹⁴⁶ It also establishes a framework for managing non-hazardous wastes.¹⁴⁷ In addition to the “cradle to grave” tracking system, RCRA provides a system for identifying and cataloging various hazardous wastes.¹⁴⁸ Waste may be classified as hazardous either (1) because it is present on a list maintained by EPA,¹⁴⁹ or (2) because it exhibits a hazardous characteristic¹⁵⁰ such as corrosivity,¹⁵¹ reactivity,¹⁵² ignitability,¹⁵³ or toxicity.¹⁵⁴ RCRA also sets standards and guidelines for generators¹⁵⁵ and transporters¹⁵⁶ of hazardous wastes as well as operators of hazardous waste treatment, storage, and disposal (“TSD”) facilities.¹⁵⁷ Finally, RCRA outlines a permit system for enforcing these standards,¹⁵⁸ as well as a procedure for delegating the administration of the permit program to the individual states.¹⁵⁹

RCRA was intended to make disposal of waste safer than it had been by encouraging recycling and the development of improved technologies without directly regulating American industrial production.¹⁶⁰ Another goal of RCRA was to allow each state to

¹⁴⁵ Environmental Protection Agency, RCRA Summary, <http://www.epa.gov/region5/defs/html/rcra.htm> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ 42 U.S.C. § 6921 (2000).

¹⁴⁹ EPA Lists of Hazardous Wastes, 40 C.F.R. §§ 261.30–261.33 (2005) (providing identification and listing of specific hazardous wastes).

¹⁵⁰ 42 U.S.C. § 6903(5) (2000).

¹⁵¹ 40 C.F.R. § 261.21 (2005).

¹⁵² *Id.* § 261.22 (2005).

¹⁵³ *Id.* § 261.23 (2005).

¹⁵⁴ *Id.* § 261.24 (2005).

¹⁵⁵ 42 U.S.C. § 6922 (2000).

¹⁵⁶ *Id.* § 6923.

¹⁵⁷ *Id.* § 6924.

¹⁵⁸ *Id.* § 6925.

¹⁵⁹ *Id.* §§ 6925–6926.

¹⁶⁰ Office of Environmental Policy and Guidance, Department of Energy, Resource Conservation and Recovery Act Legislative History, <http://www.eh.doe.gov/oepa/laws/rcra.html> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

maintain responsibility for its solid waste problem.¹⁶¹ In the context of methamphetamine production, the provisions regulating use and disposal of hazardous wastes are technically applicable. Individuals or companies that generate, transport, or dispose of hazardous waste inappropriately or without a permit are potentially liable under RCRA, and either the EPA¹⁶² or private citizens¹⁶³ may bring charges against them. If they are found liable, violators may be required to pay for cleanup costs.¹⁶⁴

The sweeping mandate provided by RCRA places almost all methfields within its reach.¹⁶⁵ Almost every methamphetamine lab will produce either a listed¹⁶⁶ or characteristic¹⁶⁷ hazardous waste under RCRA.¹⁶⁸ Additionally, ignorance that a particular chemical is covered under RCRA is no defense to a violation.¹⁶⁹ The government only has to prove the defendant knew the material was hazardous, meaning it could cause injury to people or to the

¹⁶¹ *Id.*

¹⁶² 42 U.S.C. § 6928(e) (2000).

¹⁶³ *Id.* § 6972(a)(1)(A)–(B); *see also* Vogt, *supra* note 2, at 266.

¹⁶⁴ *See* Vogt, *supra* note 2, at 266; Schmitter et al., *supra* note 57, at 11 (“RCRA also provides for legal action to be brought by government or citizens against violators for recovery of cleanup costs, but the likelihood of success against meth lab operators of any size is slim.”).

¹⁶⁵ *See* *Hearing—Murtha Testimony*, *supra* note 20, at 2 (“As a law enforcement matter, regulation of methamphetamine labs fall primarily within the jurisdiction of other federal, state and local law enforcement agencies. EPA does, however, have authority to investigate environmental crimes relating to such labs (e.g., the unpermitted disposal of RCRA hazardous waste).”).

¹⁶⁶ *See* EPA Lists of Hazardous Wastes, 40 C.F.R. §§ 261.30–261.33 (2005).

¹⁶⁷ *See* 42 U.S.C. § 6903(5) (2000); 40 C.F.R. § 261.21–24 (2005).

¹⁶⁸ *See* *Hearing—Murtha Testimony*, *supra* note 20, at 5 (“[M]any of the chemicals and wastes likely to be associated with methamphetamine production may be addressed as hazardous waste under RCRA, typically as ‘characteristic’ (e.g., ignitable) hazardous waste. A relatively smaller number of the wastes associated with methamphetamine production, including solvents and other chemicals used in the purification of crude methamphetamine products would also be considered hazardous waste based upon a listing as discarded commercial chemical products. Nearly every investigation of a methamphetamine lab reveals either characteristic or listed hazardous waste.”).

¹⁶⁹ 42 U.S.C. § 6928(d) (2000).

environment.¹⁷⁰ Given that the list of ingredients includes battery acid and camp stove fuel, it is reasonable to infer that meth lab operators have at least some understanding of the hazardous nature of the materials they use.

Unfortunately, in most situations the reward of prosecution under RCRA is simply not worth the effort for several reasons. First, operators of methamphetamine labs are generally difficult to locate.¹⁷¹ If they are caught, operators are highly likely to be insolvent and therefore unable to pay cleanup costs and/or penalties.¹⁷² This is particularly true of smaller labs because users are often cooking to support their own habits. Finally, prosecution by the EPA under RCRA typically yields lower penalties than criminal prosecution by the DEA or state law enforcement for crimes such as possession, conspiracy to manufacture a controlled substance, or racketeering.¹⁷³

2. CERCLA—*The Not-So-Super Fund*

CERCLA (also known as “Superfund”)¹⁷⁴ was the first piece of federal legislation that granted the government broad powers to require and direct cleanup of hazardous waste sites.¹⁷⁵ Under

¹⁷⁰ See, e.g., *United States v. Self*, 2 F.3d 1071, 1090 (10th Cir. 1993) (“A defendant’s lack of knowledge of the regulation is no defense. . . . Persons dealing with materials, which by their very nature are potentially dangerous, are presumed to know the regulatory status of the material.”).

¹⁷¹ See Vogt, *supra* note 2, at 266; McPherson, *supra* note 7, at K-04 (“The problem is finding them Drugmakers and sellers can be hard to track down.”).

¹⁷² See Vogt, *supra* note 2, at 266.

¹⁷³ See *Hearing—Murtha Testimony*, *supra* note 20, at 2 (“It is our experience that in cases involving methamphetamine laboratories, the drug, racketeering and conspiracy charges generally brought are typically easier to prosecute and yield far greater sentences than environmental crimes. Thus, in many instances EPA’s investigation of a methamphetamine laboratory would have limited incremental value.”).

¹⁷⁴ 42 U.S.C. §§ 9601–9675 (2000).

¹⁷⁵ See Vogt, *supra* note 2, at 266; Environmental Protection Agency, CERCLA Summary, <http://www.epa.gov/region5/defs/html/cercla.htm> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

CERCLA, the EPA can require cleanup of any release¹⁷⁶ of hazardous waste that threatens human health or the environment.¹⁷⁷ The terms “release,”¹⁷⁸ “facility,”¹⁷⁹ and “hazardous substance”¹⁸⁰ are broadly defined under CERCLA. Many of the chemicals used in methamphetamine production that are RCRA hazardous wastes also meet the CERCLA definition of “hazardous substance.”¹⁸¹

Unlike RCRA, however, CERCLA is intended to ensure remediation of sites after toxins have been released, not simply to punish unauthorized disposal. CERCLA is a joint and several strict liability regime, and the net of liability is broad. CERCLA liability attaches to several categories of “potentially responsible parties,”¹⁸² including current owners or operators,¹⁸³ past owners and operators at the time of disposal,¹⁸⁴ generators who arranged for disposal or transportation,¹⁸⁵ and transporters.¹⁸⁶ Under these definitions, the EPA has authority to assign liability to almost every party who comes into contact with a contaminated property.

The broad and absolute liability imposed under CERCLA has the potential for disproportionately harsh outcomes when applied to methfield cleanup. Since labs are often set up in transient locations such as rental properties, apartments and motel rooms, property owners and managers are at risk of being left with the remediation bill long after the lab operators have moved on to a new location.¹⁸⁷ Enforcing such widespread liability may actually

¹⁷⁶ 42 U.S.C. § 9601(22) (2000).

¹⁷⁷ *Id.* § 9604(a)(1).

¹⁷⁸ *Id.* § 9601(22).

¹⁷⁹ *Id.* § 9601(9).

¹⁸⁰ *Id.* § 9601(14).

¹⁸¹ *Id.*; see also Schmitter et al., *supra* note 57, at 10 (“Many of the chemicals used in meth production meet the definition of a hazardous substance, not only under CERCLA, but other federal environmental regulations as well.”).

¹⁸² 42 U.S.C. § 9607(a) (2000).

¹⁸³ *Id.* § 9607(a)(1).

¹⁸⁴ *Id.* § 9607(a)(2).

¹⁸⁵ *Id.* § 9607(a)(3).

¹⁸⁶ *Id.* § 9607(a)(4).

¹⁸⁷ See Staff Report, *supra* note 16, at 8 (“Because these small labs are found in single-family homes (49%), vehicles, apartment complexes, motels and hotels and duplexes in that order, the results of contamination for families and owners can be catastrophic. Perpetrators often are using a rented property and any

function as a disincentive to remediate property. As property owners abandon properties that they cannot afford to clean up, lenders and local governments are faced with the responsibility of either cleaning the contaminated properties or allowing them to lay dormant and dirty, contributing nothing to the tax base and potentially contaminating contiguous properties.¹⁸⁸

Although the abandonment scenario is a real concern in the remediation of methfield sites, it is probably not a threat under CERCLA because the EPA generally only enforces it against the most severely polluted properties in the nation, which have been compiled by the EPA into the National Priorities List ("NPL").¹⁸⁹ Only the most heavily contaminated sites, or sites that pose an "imminent and substantial danger to the public health or welfare"¹⁹⁰ would be likely to receive any attention at all, and would probably be of the larger superlab variety. Moreover, cuts in the trust fund that fuels cleanup efforts have led some to conclude that the

additional clean-up to make the property safe is the responsibility of the property owner.").

¹⁸⁸ See *Hearing*—Guevara Testimony, *supra* note 42, at 63 ("Often the value of the contaminated property is less than the cleanup costs and owners simply walk away from their investments leaving the cleanup costs to the state or local governments."). See also Staff Report, *supra* note 16, at 8–9 ("While most property owners are certainly responsible, some, facing a huge bill for a crime they are directly victimized by, might simply sell or rent the property again without any notice of the property's prior history or hidden dangers. . . . [H]ealth consequences to the community may be profound if no clean-up occurs While these are private properties that have been polluted, the consequences of that pollution are carried by the whole community in terms of risks to environment and health."); Schmitter et al., *supra* note 57, at 10 ("As more meth labs are dismantled and property owners are increasingly at risk for cleanup costs, we may see a similar situation as occurred when the more 'traditional' hazardous waste sites were created—the abandonment of property as owners are unable to afford or refuse to acknowledge responsibility for cleanup. Lenders may find themselves holding mortgages on properties that are contaminated by previous methamphetamine production. Cities and counties may also find an increase in the number of properties owing back taxes as a result of abandonment, and they may be hesitant to file liens or condemn properties for fear of assuming unwanted liability.").

¹⁸⁹ 42 U.S.C. § 9605(a)(8) (2000).

¹⁹⁰ *Id.* § 9604(a)(1).

“Superfund” would be more aptly named the “Puny-fund.”¹⁹¹ Consequently, the EPA must be extremely selective with prosecution efforts, which provides an additional reason to conclude that smaller “mom and pop” labs will almost certainly remain, at least functionally, unregulated.

The Superfund Amendments and Reauthorization Act (“SARA”) attempted to clarify CERCLA and provided standards for remediating properties contaminated by hazardous waste.¹⁹² Congress intended SARA to increase the focus on health problems created by contaminated sites by utilizing standards and requirements found in other environmental regulations to establish satisfactory cleanup levels under CERCLA.¹⁹³ SARA, however, provides no standards for methfield cleanup, and offers states little information to utilize in drafting their own standards and regulations.¹⁹⁴

In 2002, President Bush signed the “Small Business Liability Relief and Brownfields Revitalization Act”¹⁹⁵ into law. A “brownfield” is defined as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant,

¹⁹¹ *Reform of Superfund Act of 1995, Hearing on H.R. 2500 Before the Subcomm. on Water Resources and Environment of the Comm. on Transportation and Infrastructure*, 99th Cong. 4 (1995) (statement of Rep. Borski), available at http://commdocs.house.gov/committees/trans/hpw104-35.000/hpw104-35_0.HTM (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹⁹² See Vogt, *supra* note 2, at 268; Environmental Protection Agency, SARA Summary, <http://www.epa.gov/superfund/action/law/sara.htm> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

¹⁹³ 42 U.S.C. § 9621(d)(1) (2000) (“Remedial actions selected under this section or otherwise required or agreed to by the President under this chapter shall attain a degree of cleanup of hazardous substances, pollutants, and contaminants released into the environment and of control of further release at a minimum which assures protection of human health and the environment. Such remedial actions shall be relevant and appropriate under the circumstances presented by the release or threatened release of such substance, pollutant, or contaminant.”); see also SARA Summary, *supra* note 192.

¹⁹⁴ See Vogt, *supra* note 2, at 268.

¹⁹⁵ H.R. 2869, 107th Cong. (2001) (enacted).

or contaminant.”¹⁹⁶ The Act was a response to an increasing number of abandoned or underutilized properties, and a corresponding reluctance on the part of developers to expose themselves to CERCLA liability by purchasing them.¹⁹⁷ Although brownfields are located all over the country, many are located in otherwise desirable urban or industrial areas, contributing to sprawl and dragging down the community tax base.¹⁹⁸

In addition to providing prospective purchasers who satisfy certain due diligence requirements with a defense to CERCLA liability, the Act provides funds for site assessment and remediation of contaminated property, including former methamphetamine labs (which fall under the “controlled substance” provisions of the Act).¹⁹⁹ Brownfields redevelopment

¹⁹⁶ 42 U.S.C. § 9601(39)(A) (2000).

¹⁹⁷ Faith R. Dylewski, Comment, *Ohio's Brownfield Problem and Possible Solutions: What Is Required For a Successful Brownfield Initiative?*, 35 AKRON L. REV. 81, 82 (2001) (“Unfortunately, due to the broad strict liability that CERCLA imposes, CERCLA has had the unintended counter-effect of stifling brownfield cleanup and redevelopment.”); Carrie Watkins, *Not My Brownfield: Municipal Liability For Acquiring Title to Brownfields at the Federal And New York State Level*, 9 ALB. L. ENVTL. OUTLOOK 275, 277 (“[S]ites that do not rise to the level of contamination required by Superfund still sit abandoned because [sic] the risks imposed by ownership.”).

¹⁹⁸ Bill Clements, *St. Paul Port Authority Willing to Transform Globe Materials Building Site Into Asset*, LEGAL LEDGER, Jan. 23, 2006 (“[I]t wasn’t until the early 1990s that St. Paul—like many other former industrial cities—began a major push to reclaim abandoned or underutilized brownfield sites and turn them into job- and tax-producing business centers. ‘We’ve been doing this for more than 40 years,’ said Lorrie Louder, [St. Paul Port Authority’s] director of industrial development, ‘but we’ve really been rocking and rolling the past 10 years. Creating jobs and adding to the tax base is what we’re all about.’”); Anthony DePalma, *Finding the Bottom of a Polluted Field*, N.Y. TIMES, Feb. 5, 2006, § 1, at 27 (“[Brownfield laws] allow certain types of pollution to be left in place and capped. Developers, protected from future liability by these laws, have opened up vast stretches of urban wasteland to new construction.”); Kim McGuire, *Liability Limit on Waste Sites Draws Praise*, DENVER POST, Nov. 3, 2005, at B-02 (“Robbie Roberts, EPA regional administrator based in Denver, said the Brownfields program isn’t helping just blighted urban city blocks, it’s also helping several Western mountain communities near abandoned mines.”).

¹⁹⁹ METHFIELDS, *supra* note 14 (“Due to growing national concern, Congress made properties contaminated by controlled substances such as methamphetamine (meth) eligible for Brownfields funding.”).

funding is not intended to be a primary solution to the problem of methfield remediation, but simply one way to help pay for a cleanup.²⁰⁰ Regardless, the defense shields and cleanup funds provide both an incentive to clean up methfield sites as well as the means to do so, provided property owners are sophisticated enough to access the funds. In 2004, the EPA provided \$200,000 for a pilot program to Public Health Seattle and King County in Washington State to assess and remediate nearly 200 methfields over two years.²⁰¹

Even with these developments, the lack of health-based cleanup standards and guidelines still leave conspicuous gaps in the federal response to methfield remediation. As discussed above, these same gaps have provided the most significant challenges for states in their formulation of remediation guidelines. Traditional risk assessment models require, in addition to identification of contaminants, identification of health effects and contamination levels at which those health effects manifest.²⁰² Without this information, the effectiveness of state cleanup standards can only be maximized by overly conservative technology-based standards, the benefits of which are uncertain. Moreover, additional harmful compounds may currently remain completely unregulated.

3. *DEA Response—Straighten Up, But Leave it Dirty*

The Drug Enforcement Administration (“DEA”) currently handles the majority of federal cleanups.²⁰³ However, their primary

²⁰⁰ METHFIELDS, *supra* note 14.

²⁰¹ Environmental Protection Agency, Brownfields 2004 Grant Fact Sheet, Public Health Seattle and King County, WA, EPA-560-F-04-086, June 2004, available at <http://www.epa.gov/brownfields/04grants/seattle.pdf> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology); Schmitter et al., *supra* note 57, at 12 (“EPA has made provisions in its brownfield assessment pilot program for the inclusion of former meth labs, and recently awarded Public Health Seattle and King County, Washington \$200,000 to assess and cleanup approximately 200 methamphetamine drug labs over a two-year period.”).

²⁰² See Vogt, *supra* note 2, at 264.

²⁰³ MRRRA Background, *supra* note 19 (“DEA handles the bulk of the cleanup at the federal level, but this involves securing evidence and the removal of gross contamination—not the remediation of residual chemicals.”).

goals are investigating for the purpose of criminal prosecution, dismantling labs for evidence, and ensuring cleanup of the most dangerous chemicals.²⁰⁴ The burden remains on state and local law enforcement to provide immediate response in a meth lab seizure.²⁰⁵

The DEA provides support to state and local law enforcement agencies through programs such as the Clandestine Laboratory Training program²⁰⁶ and by dispersing funds received from the Community Oriented Policing Services (“COPS”) program.²⁰⁷ The Clandestine Laboratory Training program provides state and local law enforcement with skills and resources necessary to investigate and dismantle seized labs.²⁰⁸ The program has provided training to more than 9300 state and local law enforcement officers and 1900 DEA employees since 1998.²⁰⁹

When a meth lab is seized, EPA regulations require removal of all hazardous waste materials.²¹⁰ The DEA and the responding state or local agency—as a legal fiction under RCRA—assume the role of the “generator” of the hazardous waste, and thereby become

²⁰⁴ MRRRA Background, *supra* note 19.

²⁰⁵ *Hearing*—Benson Testimony, *supra* note 60 (“In response to the spread of labs across the country, more and more state and local law enforcement officers require training to investigate and safely dismantle these labs.”).

²⁰⁶ *Hearing*—Benson Testimony, *supra* note 60.

²⁰⁷ *Hearing*—Guevara Testimony, *supra* note 42, at 64 (“DEA’s hazardous waste program, with the assistance of the Community Oriented Policing Services (COPS) program, supports and funds the cleanup of a majority of the laboratories seized in the United States.”).

²⁰⁸ *Hearing*—Benson Testimony, *supra* note 60. There are several courses available through the training program, located at the DEA Clandestine Laboratory Training Facility in Quantico, Virginia, including: Basic Clandestine Laboratory Certification School, Advanced Site Safety School, and Clandestine Laboratory Tactical School. Each course exceeds the minimum safety requirements of the Occupational Safety Health Administration (“OSHA”), and is provided at no cost to qualified officers. *Hearing*—Benson Testimony, *supra* note 60.

²⁰⁹ *Hearing*—Benson Testimony, *supra* note 60.

²¹⁰ See 40 C.F.R. §§ 261–262 (2005); *Hearing*—Guevara Testimony, *supra* note 42, at 63.

responsible for its cleanup.²¹¹ The COPS program provides support and funding for the initial cleanup and disposal of chemicals at the majority of labs seized in the United States.²¹²

In order to more effectively utilize COPS funding in methfield cleanup, in 1990 the DEA established the Hazardous Waste Cleanup Program.²¹³ The Hazardous Waste Cleanup Program outsources remediation of methfield sites to pre-approved private sector contractors.²¹⁴ The goal is to promote safety, efficiency, and cost-effectiveness by utilizing companies that specialize in the removal of hazardous wastes.²¹⁵ The program has substantially decreased average costs per cleanup, from \$3,300 per cleanup in 2002 to \$1,900 per cleanup in 2004.²¹⁶

²¹¹ See *Hearing—Guevara Testimony*, *supra* note 42, at 11–12 (“As the ‘generator’, law enforcement bears the responsibility for ensuring that the wastes from clandestine drug laboratories are managed in compliance with all applicable health, safety, transportation, and environmental requirements.”); Lisa Scanga, *Drug Problem: Environmental Solution*, 22 PACE ENVTL. L. REV. 151, 154 (2005) (“Pursuant to statute, the DEA, along with the state and local law enforcement agencies, becomes the ‘generator’ of hazardous waste when clandestine laboratories are seized.”) (internal quotations omitted).

²¹² See *Hearing—Guevara Testimony*, *supra* note 42, at 64; Staff Report, *supra* note 16, at 7 (“[DEA] pays for the initial clean-up and disposal of chemicals in a meth lab—the DEA clean up program has been operating at roughly \$25 million a year for each of the last four fiscal years.”).

²¹³ See *Hearing—Rannazzisi Testimony*, *supra* note 43 (“In 1990, the DEA established a Hazardous Waste Cleanup Program to address environmental concerns from the seizure of clandestine drug laboratories. This program promotes the safety of law enforcement personnel and the public by using qualified companies with specialized training and equipment to remove hazardous waste.”).

²¹⁴ See *Hearing—Benson Testimony*, *supra* note 60; *Hearing—Rannazzisi Testimony*, *supra* note 43; Scanga, *supra* note 211, at 155.

²¹⁵ See *Hearing—Benson Testimony*, *supra* note 60 (“[The Hazardous Waste Cleanup Program] promotes the safety of law enforcement personnel and the public by using qualified companies with specialized training and equipment to remove hazardous waste.”); *Hearing—Rannazzisi Testimony*, *supra* note 43; Scanga, *supra* note 211, at 155.

²¹⁶ See *Hearing—Guevara Testimony*, *supra* note 42, at 64 (“Between 1992 and 2002, the number of cleanups increased from 394 to over 7,000. Even though the number of cleanups has increased by 1,700 percent, the average cost per cleanup has continued to decrease since DEA first began using contractor

In practice, however, the cleanup achieved under DEA supervision falls far short of total remediation. The DEA limits the scope of its response to the initial cleanup of a seized lab,²¹⁷ which only entails the collection and disposal of methamphetamine, lab supplies, and precursor chemicals.²¹⁸ The DEA is responsible for the cleanup only because it is considered part of a crime scene.²¹⁹ Waste may be collected primarily for evidentiary purposes.²²⁰ The DEA's responsibility ends when the obvious signs of methamphetamine production have been removed and disposed.²²¹ Neither the DEA nor its contractors attempt to fully remediate the site.²²² Moreover, no attempt is made to document the potential contaminants so that such information could be used by another party in future cleanup efforts.²²³ The DEA has specifically acknowledged that it is not equipped to conduct thorough remediation operations.²²⁴

services in the early 1990s. Currently, the average cost per cleanup is \$1,900, down from \$3,300 in FY 2002.”)

²¹⁷ See Staff Report, *supra* note 16, at 7–8.

²¹⁸ See Staff Report, *supra* note 16, at 8.

²¹⁹ See Staff Report, *supra* note 16, at 8.

²²⁰ See MRRA Background, *supra* note 19.

²²¹ See MRRA Background, *supra* note 19; see also Memorandum from Rep. Bart Gordon to the Democratic Members of the H. Comm. on Science, (2005), available at <http://democrats.science.house.gov/Media/File/Investigations/Methamphetamine/Memo%20on%20meth%20events.pdf> (last visited Apr. 20, 2006) (“DEA funds a clean up of all the materials used in production. However, there is no legal requirement that a property be remediated to a safe level. We do not even have clear standards from EPA on what would constitute ‘clean.’”) (on file with the North Carolina Journal of Law & Technology).

²²² See MRRA Background, *supra* note 19; Staff Report, *supra* note 16, at 8.

²²³ Staff Report, *supra* note 16, at 8.

²²⁴ See *Hearing—Guevara Testimony*, *supra* note 42, at 63 (stating in reference to a large meth lab chemical dump site that “DEA cleaned up the hazardous waste from the site; however, DEA is not equipped to cleanup [sic] the contaminated soil or assess any potential problems associated with contaminated water in the area.”).

IV. METHAMPHETAMINE REMEDIATION RESEARCH ACT OF 2005—CURE FOR WHAT AILS US OR JUST A BAND-AID?

The Methamphetamine Remediation Research Act ("MRRA"), was passed unanimously by the House on December 13, 2005.²²⁵ The MRRA was introduced by Representative Bart Gordon of Tennessee to address shortcomings in the current federal approach to cleanup of methamphetamine sites and was designed to help guide states in the development of response and remediation policies.²²⁶ Representative Gordon initially decided to champion this issue, in part, because Tennessee had been severely affected by the spread of methamphetamine production and use.²²⁷ In 2004, Tennessee had the third highest total number of reported meth lab incidents (busts, responses due to fire, etc.) in the nation.²²⁸

If passed into law, the MRRA would address four major problem areas limiting current response measures. First, it would provide voluntary model cleanup guidelines for states to look to as they develop their own.²²⁹ Second, it would assess current research and develop research programs to fill in existing data gaps.²³⁰ Third, it would authorize research into more effective detection methods to protect the first responders at a meth lab site, as well as for use in subsequent cleanup.²³¹ Fourth, it would convene a periodic technology transfer conference for states and federal

²²⁵ Press Release, Subcomm. on Environment, Technology and Standards, Comm. on Science, Democratic Caucus, House Approves Gordon Methamphetamine Bill Unanimously (Dec. 13, 2005) [hereinafter Press Release—House Approves Unanimously], available at <http://sciencedems.house.gov/subcommittee/ets.aspx> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²²⁶ See MRRA Background, *supra* note 19.

²²⁷ Press Release—Gordon Methamphetamine Act Passes House, *supra* note 98 ("I wrote this bill to address a specific problem in Tennessee, but the legislation's benefit will extend far beyond my state's borders to protect unsuspecting families living in homes that were once illegal meth labs," stated Rep. Gordon.)

²²⁸ H.R. REP. NO. 109-42, at 14 (2005) (statement of Rep. Davis).

²²⁹ H.R. 798, 109th Cong. §§ 2(6), 3(a), 3(c) (2005).

²³⁰ *Id.* at § 4.

²³¹ *Id.* at § 7.

agencies to discuss implementation issues and to disseminate new findings.²³²

A. *Voluntary Guidelines*

The MRRA would create guidelines that states could use as a model in developing their own response policies.²³³ The Assistant Administrator of Research and Development of the EPA would be required to, in collaboration with the National Institute of Standards and Technology (“NIST”), “establish voluntary guidelines, based on the best available scientific knowledge, for the remediation of former methamphetamine laboratories, including guidelines regarding preliminary site assessment and the remediation of residual contaminants.”²³⁴ The development of guidelines will be guided by three considerations: (1) existing standards and guidelines at the federal, state and local levels; (2) the unique challenges posed by each methfield and its location; and (3) the expected costs involved.²³⁵ The guidelines would assemble the most effective policies and guidelines currently in use by states and supplement them with additional research.²³⁶ Ideally, the result would be a uniform approach to methfield remediation that provides the best possible response, and would be of particular use to states that are just beginning to address the problem.²³⁷ Additionally, uniform standards would provide a foundation for owners to rely on when they clean their property, and would enable

²³² *Id.* at § 5.

²³³ *Id.* at §§ 2(6), 3(a), 3(c).

²³⁴ *Id.* at § 3(a).

²³⁵ H.R. 798, 109th Cong. §§ 3(b)(1)–(3) (2005).

²³⁶ *See Hearing*—Martynt Testimony, *supra* note 5, at 38 (“[The guidelines established under the MRRA] will be able to combine the best of all of the existing state guidelines and provide a national guideline that will be available to all states, especially those that are new to the problem. The result will be more uniform remediation guidelines for the states that allow homeowners to more easily understand what is necessary to decontaminate their property. Additionally, a standard could unify potential practices for insurance providers, cleanup, disposal and remediation companies.”).

²³⁷ *See Hearing*—Martynt Testimony, *supra* note 5, at 38.

businesses such as insurance providers and remediation contractors to standardize their policies toward methfields.²³⁸

B. Further Research

The second major section of the MRRA requires the EPA to establish a comprehensive research program to provide information crucial for effective guidelines.²³⁹ The EPA, in cooperation with the National Academy of Sciences (“NAS”), would evaluate the “status and quality of research on the residual effects of methamphetamine laboratories.”²⁴⁰ The evaluation would identify gaps in existing data in order to assist the EPA in developing a comprehensive research plan. In particular, the MRRA is concerned with effects of meth labs on three groups: residents at or near functional meth labs,²⁴¹ residents at or near former meth labs,²⁴² and first responders.²⁴³

The subsequent research plan would also be required to place particular emphasis on the biological effects of meth labs on children.²⁴⁴ Typically, children are more significantly affected by lower doses of toxins, and they often come into contact with—and attempt to eat—surface areas that the adult population does not.²⁴⁵

²³⁸ See *Hearing—Martyny Testimony*, *supra* note 5, at 38.

²³⁹ H.R. 798, 109th Cong. § 4 (2005).

²⁴⁰ *Id.* at § (6)(a).

²⁴¹ *Id.* at § (6)(a)(1).

²⁴² *Id.*

²⁴³ *Id.* at § (6)(a)(2).

²⁴⁴ *Id.* at § (6)(a)(1).

²⁴⁵ Colorado Rationale, *supra* note 85, at 4 (“[T]he State of Washington recently lowered its acceptable level of surface contamination to 0.1 ug/100 cm². Again, health information was not utilized to set this standard. Rather the thinking was that in the face of an unknown risk to crawling infants, known contaminants should be reduced to the lowest practical levels using current available methods and processes.”); Washington State Rationale, *supra* note 17, at 3 (“The goal of the decontamination standards is to provide protection for all people, particularly for infants and children, who are thought to be the most susceptible to the toxic effects of residual chemicals. This susceptibility is a result of numerous factors, including the young child’s developing physiology, higher intake of food, air, and fluids in proportion to their body weight compared to adults, and their unique behavior patterns.”).

As such, using children as a target population should provide adequate protection to other populations as well.

Currently, little research has been done into either the health effects of exposure to a meth lab environment or the best way to mitigate those harmful effects.²⁴⁶ Specifically, almost no research has been conducted on children regarding the health effects of exposure to children,²⁴⁷ although anecdotal evidence indicates the results are serious.²⁴⁸

The resulting federal research program would cover a broad range of topics, such as the identification of precursor and byproduct chemicals associated with methamphetamine production,²⁴⁹ assessing the risks involved with various forms and levels of exposure,²⁵⁰ evaluating the effectiveness of current cleanup and remediation techniques,²⁵¹ and creating a plan for future research to better assess risks and responses associated with lab cleanup.²⁵² Funding in this area, combined with a unified program of inquiry directed by the EPA and the National Academy of Sciences, is an effective way to ensure the most progress in the shortest amount of time.²⁵³

C. *Better Detection Methods*

The third major area addressed by the MRRA involves developing methods and equipment for detecting methamphetamine residue.²⁵⁴ The goal is to develop more effective detection kits for first responders,²⁵⁵ as well as reference materials and validation procedures to use in methamphetamine

²⁴⁶ See *Hearing*—Martyny Testimony, *supra* note 5, at 34.

²⁴⁷ See Washington State Rationale, *supra* note 17, at 4 (“No studies have evaluated the health effects of children directly exposed to methamphetamine in illegal drug labs.”).

²⁴⁸ See *Hearing*—Martyny Testimony, *supra* note 5, at 34.

²⁴⁹ H.R. 798, 109th Cong. § (4)(1) (2005).

²⁵⁰ *Id.* at § (4)(2).

²⁵¹ *Id.* at § (4)(4).

²⁵² *Id.* at § (4)(3).

²⁵³ See *id.*

²⁵⁴ H.R. 798, 109th Cong. § (7)(1) (2005).

²⁵⁵ *Id.*

detection testing.²⁵⁶ Companies are already developing detection kits in the private sector; however, there is no mechanism in place to evaluate their effectiveness, nor are there any standards or certification programs.²⁵⁷ More advanced testing procedures and equipment would facilitate the identification of hazards involved with cleanup of methfield sites. Additionally, they would assist law enforcement and first responders facing active labs in the field, allowing them to quickly identify contamination levels and protect themselves and the public accordingly.²⁵⁸

D. Technology Transfer Conference

The bill requires the EPA to convene a conference of “appropriate state agencies, as well as individuals and organizations involved in research and other activities directly related to the environmental, or biological impacts of former methamphetamine laboratories.”²⁵⁹ The first conference is to occur within six months after the MRRA is enacted, and at least every three years thereafter.²⁶⁰ After each conference, the EPA will submit a report to Congress summarizing the proceedings, the issues raised by participants, and the Agency’s proposed responses to those issues.²⁶¹ This report would also be made available to the general public.²⁶²

The technology transfer mandate in the MRRA provides a conduit for sharing what is already known about the problem, and gives the EPA a platform from which to disseminate any developments that occur after the Act is passed. These

²⁵⁶ *Id.* at § (7)(2).

²⁵⁷ *See Hearing—Martyny Testimony, supra* note 5, at 39.

²⁵⁸ *See Hearing—Martyny Testimony, supra* note 5, at 39; *see Staff Report, supra* note 16, at 4 (“One tool that would be useful to enhance law enforcement officers’ ability to identify labs—as well as to notify those officers that they are entering an area that could be hazardous to their own health—would be a reliable, quick response field test kit for methamphetamines. Such an inexpensive kit should be developed.”).

²⁵⁹ H.R. 798, 109th Cong. § (5)(a) (2005).

²⁶⁰ *Id.*

²⁶¹ *Id.* at § (5)(b).

²⁶² *Id.*

conferences will be important opportunities to exchange information and develop new ideas throughout the country. Methamphetamine use and production has become a national problem,²⁶³ and it is crucial to develop a national response. Technology transfer conferences will give every state the same level of knowledge and sophistication to develop methods of detection and remediation. Currently, West Coast states have a relative advantage because they have been dealing with meth labs longer than states in the Midwest or Southeast. There are currently no procedures in place to facilitate exchanges between states so that agencies may share what has worked and what has not.

Even states with well-developed guidelines and policies, like Oregon and Washington, will benefit from collaboration. Currently, states with established policies have little incentive to proactively study the approaches of states newer to the problem, such as Tennessee and North Carolina. Conferences provide exposure to the approaches taken by “younger” methamphetamine states, which may be innovative and useful to more “mature” states. Without an opportunity to share experiences, good ideas could remain underutilized.

Technology transfer conferences also benefit the federal program, creating a uniform approach to addressing the myriad issues raised by methamphetamine production.²⁶⁴ The conferences provide an opportunity for the EPA to seek and receive feedback from the states on federal policy guidelines. By discussing what has worked and what has failed in the field, the EPA will be able to develop a synergy between data collected in controlled research conditions and the effectiveness of those results when they are put into practice.

V. NOT SNAKE OIL, BUT ALSO NOT THE CURE FOR CANCER

Overall, the MRRA is a good piece of legislation. It attempts to provide a uniform federal response to what is no longer a regional problem. It consolidates information, seeks additional

²⁶³ See *Hearing*—Martyny Testimony, *supra* note 5, at 38–39.

²⁶⁴ See *Hearing*—Martyny Testimony, *supra* note 5, at 38–39.

information, and it proposes to transform that information into useful products and approaches in the fight against methamphetamine. The MRRA does not solve the problem, but it does provide a promising starting point.

Despite the relative strengths of the MRRA, there are three weaknesses underlying the mandate it creates. First, the bill, as it is currently drafted, does not actually do anything except authorize research and require the EPA to set standards. As such, it is entirely speculative and exploratory, relying on future developments for its success. It is not an action plan, but an authorization to further investigate the problem. Second, the detection kits it seeks to develop only address methamphetamine. Thus, the constituent and precursor chemicals commonly found at methfield sites will remain unaddressed. Third, and most importantly, voluntary adoption of the guidelines ultimately developed by the EPA is a serious deficiency, and significantly mitigates the MRRA's potency.

A. Ultimately, It Is Just Another Study of the Problem

On one hand, the research program is perhaps the strongest contribution in the MRRA, as it addresses the lack of information states have had to face as they attempted to develop responses to meth detection and cleanup. Information is critical when facing a new problem. If the federal government was to do one thing to address the methamphetamine epidemic, providing funds for a comprehensive research program would undeniably be a step in the right direction.

However, the fact that information is necessary to address the methamphetamine problem by no means suggests that it is sufficient by itself to solve that problem. Unfortunately, the MRRA does not offer much more. It consolidates existing information and gives direction to future research, but does not provide any concrete guidance or assistance. The success or failure of the Act is linked to what the research finds, as well as what those findings help to facilitate. The MRRA does nothing on its face to directly address the problems caused by methamphetamine production. In this sense, it has the appearance

of being a proactive, definitive response to a nationwide crisis, but does not actually do anything beyond implementing another layer of bureaucracy. In other words, it is, fundamentally, just another study.

On the other hand, the MRRA provides a foundation, currently lacking at the federal level, from which additional progress can be made. One of the biggest hurdles faced by states as they tackle the meth problem is lack of information. The information that has been assembled is fragmented because different states and research organizations have been functioning almost entirely independent of each other. In this sense, the MRRA serves a valuable function by consolidating and disseminating the information that is currently available. It is likely that a unified research program will reduce data holes and create a more coherent body of knowledge from which to formulate effective guidelines.²⁶⁵

B. Detection Technologies—Meth Is Only One of Many Dangers

Another potential deficiency in the MRRA involves the language used in the section on development of detection technologies.²⁶⁶ The Act specifies a research program to develop “(1) new methamphetamine detection technologies, with emphasis on field test kits and site detection; and (2) appropriate standard reference materials and validation for methamphetamine detection testing.”²⁶⁷ Effective methods of detecting methamphetamine in the field are particularly important for law enforcement officers, firefighters, and paramedics, because they must be put on notice in

²⁶⁵ See *Hearing—Bell Testimony*, *supra* note 8, at 59 (“In education and science, we can expedite the spread of curricular initiatives and research findings in an online clearinghouse, thus addressing a glaring need for such a central source of information. It is not a university’s place to go out into the streets to arrest criminals, or to remove children from their homes when the environment is unsafe, or to treat an abuser’s addiction. It is a university’s place to train the professionals who take on the difficult jobs on the front line of the meth battle. It is a university’s place to conduct research that can provide the tools these professionals need to make a difference.”); *Hearing—Martyny Testimony*, *supra* note 5, at 38–39.

²⁶⁶ See H.R. 798, 109th Cong. § (7)(1) (2005).

²⁶⁷ *Id.* at §§ (7)(1)–(2).

order to protect themselves at the scene. It makes sense to develop an inexpensive, quick response field kit to test for methamphetamine.²⁶⁸

However, the final product is not the only source of concern at a methamphetamine lab site. The MRRA only addresses detection of the methamphetamine drug, without addressing the precursor and byproduct chemicals that are also found at methfield sites. While there are established methods for detecting at least some of the chemicals used to produce methamphetamine, many others currently remain undetectable.²⁶⁹ One of the major challenges faced by states, particularly in the context of remediation, is identifying the chemicals involved in producing the drug at a given site. The constituent chemicals, not the final product, cause the environmental degradation at a methfield. The "Findings" section of the MRRA indicates that detection of constituent and byproduct chemicals was taken into consideration when the legislation was drafted.²⁷⁰ However, no provision in the MRRA provides for detection of chemicals other than methamphetamine. Expanding § 7 of the MRRA to include detection technologies for the full range of dangerous chemicals that may be present at a methfield site would strengthen its potential impact on the problem.

²⁶⁸ See *Hearing—Bell Testimony*, *supra* note 8, 52–53, 58; Staff Report, *supra* note 16, at 4 ("Much work remains in the chemistry of detection. Current processes are slow and inefficient. Cycle times for analysis are long, in a relative sense, and present problems for efficient law enforcement. More efficient detection and diagnostic tools must be developed so that sites can be more rapidly identified and reaction times shortened. Long-term research should focus on mechanisms that quickly detect the presence of hazardous chemicals in a rental home, a motel room, or a college residence hall, much the same as a smoke alarm detects the potential for fire. Studies should continue on environmental sampling, with a focus on developing a detection mechanism for sampling air surrounding a residence.").

²⁶⁹ Staff Report, *supra* note 16, at 4; Washington State Rationale, *supra* note 17, at 5–7 (indicating detection methods are available for lead, mercury, and volatile organic compounds).

²⁷⁰ H.R. 798 § (2)(5) (2005) (stating that "procedures for sampling and analysis of contaminants need to be researched and developed.").

C. *Voluntary Guidelines Do Not Equal A Mandatory Solution*

Another ambiguity in the MRRA involves the nature of the guidelines themselves. It is not entirely clear from the text of the legislation and the surrounding publicity materials whether the standards developed by the EPA and NIST will be health-based or technology-based. From a public health perspective, health-based standards would be preferable because the goal is to create safe environments for individuals. However, from an economic perspective, health-based standards could prove to be too expensive to implement with available technology. In this sense, technology- and cost-based considerations are relevant to the development of guidelines, particularly for the potentially responsible parties and insurance companies who end up funding the cleanup.

The press releases issued by the Democratic Caucus of the Committee on Science indicate that the guidelines will be health-based,²⁷¹ as do press releases from several independent members of the House of Representatives.²⁷² However, nothing in

²⁷¹ See, e.g., Press Release—Gordon Continues Fight, *supra* note 15; Press Release—Gordon Methamphetamine Act Passes House, *supra* note 98; Press Release—House Approves Unanimously, *supra* note 225; Press Release—Democrats Work, *supra* note 15; Press Release, Comm. on Science, Democratic Caucus, Wu: Bill Advances to Protect Children and First Responders from Methamphetamine (Mar. 15, 2005), available at <http://sciencedems.house.gov/press/PRArticle.aspx?NewsID=51> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²⁷² See Press Release, Rep. Ken Calvert, Rep. Calvert Praises Passage of Methamphetamine Remediation Research Act (Dec. 13, 2005), available at <http://calvert.house.gov/pressreleases.asp?ARTICLE4024=10523> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology); Press Release, Rep. Russ Carnahan, Methamphetamine Remediation & Research Act Advances in House—Carnahan is Co-Sponsor of Bill to Combat “Meth”, a Drug Especially Prevalent In Jefferson County (Mar. 17, 2005), available at http://www.house.gov/apps/list/press/mo03_carnahan/pr050317_meth.html (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology); Press Release, Rep. Lincoln Davis, Lincoln Davis Pushes Meth Clean-up Bill in House (Mar. 17, 2005), available at <http://www.house.gov/lincolndavis/releasemarch172005.htm> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology); Press Release, Rep.

the text of the MRRA requires the EPA to base their guidelines on health standards. On the contrary, the text implies a technological- or cost-based approach, stating that they should be “based on the best currently available scientific knowledge,”²⁷³ and that the Administrator must consider, among other things, “the expected cost of carrying out any proposed guidelines.”²⁷⁴ Once the legislation is passed, the EPA will have discretion to implement its mandate within the language of the MRRA. Without an express requirement to develop health-based standards, there is no guarantee that the EPA will choose to do so, especially since the text of the MRRA implies a contrary approach.

The fact that the guidelines proposed under the MRRA are voluntary rather than mandatory is the greatest weakness of the proposed legislation and, thus, should be reconsidered.²⁷⁵ Just as creating a research program is necessary but insufficient for understanding the problem, effective guidelines are necessary for effective methfield detection and remediation. However, voluntary implementation is not sufficient to ensure a favorable outcome. States must actually adopt the guidelines to make any progress. There is no assurance states will implement the EPA’s recommendations. As Sherry Green, Executive Director of the National Alliance for Model State Drug Laws stated in her testimony on the MRRA, “[g]uidelines do not have the force of law by themselves.”²⁷⁶ The current lack of uniform guidelines undermines parties concerned with limiting their exposure to lawsuits, such as property owners, contractors, and insurance

David Wu, Congressman David Wu Continues His Fight Against the Scourge of Methamphetamine (Mar. 17, 2005), *available at* http://www.house.gov/apps/list/press/or01_wu/pr03172005meth.html (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²⁷³ H.R. 798, 109th Cong. § (3)(a) (2005).

²⁷⁴ *Id.* at § (3)(b)(3).

²⁷⁵ *Hearing—NMHC Testimony*, *supra* note 98 (“Since safe and technically sound guidelines are fundamental, we question, however, the notion that those guidelines should be voluntary, rather than mandatory.”).

²⁷⁶ *Hearing—Green Testimony*, *supra* note 82, at 28 (referring to states who have put together guidance documents that address methfield remediation.).

companies.²⁷⁷ The uncertainty produced by the widely divergent standards in the status quo will not be rectified by voluntary guidelines.

There is a consensus that methamphetamine production is a nationwide epidemic,²⁷⁸ and that the contamination left behind creates an environmental and public health crisis. Further, there is widespread agreement that the lack of quantifiable exposure levels and cleanup procedures has hindered state adoption of effective regulations.²⁷⁹ Evidence also indicates that the federal response

²⁷⁷ *Hearing*—NMHC Testimony, *supra* note 98 (“[The lack of uniform standards] has created tremendous uncertainty and confusion for property owners trying to determine the best practices for successful decontamination as well as their responsibility under these new and emerging laws. It has also subjected apartment owners to malicious or negligent treatment by remediation contractors, who may recommend a variety of unproven, unnecessary or costly decontamination strategies.”); Kim Skornogoski, *Meth Watch*, GREAT FALLS TRIB., Aug. 12, 2004, at 13A (“‘The best thing that can happen to a landlord if they have a meth lab on their property is to have the place burn down,’ Terry Youngworth, a fair housing specialist, said. ‘Insurance companies don’t cover meth cleanup.’”); John Trumbo, *Meth Cleanup Not Covered by Most Insurance Policies*, TRI-CITY HERALD, Apr. 25, 2002 (“Unlike other disasters such as flood, earthquake, fire and wind that can befall a property owner and are insurable, meth contamination isn’t something insurance companies readily accept as a legitimate claim. . . . Karl Newman, executive director of the Washington Insurance Council, said the state’s three largest insurers have taken a wait and see posture on how to handle claims for meth cleanup.”); *Weekend Edition: Making a Living From Cleaning Up Meth Labs* (NPR Radio Broadcast Dec. 17, 2005) (“Some companies have started writing exclusions [for meth lab cleanup] already. For now, though, most insurers evaluate meth cleanup claims on a case-by-case basis.”).

²⁷⁸ *See Hearing*—Martyny Testimony, *supra* note 5, at 37 (“The explosion of these clandestine laboratories has occurred during the last 10 years and has been studied for even a shorter period.”); *see also* Press Release—NMHC, *supra* note 5 (stating that in 1993 the DEA seized 218 meth labs. By 2004, there were nearly 16,000 labs operating in forty-nine states).

²⁷⁸ Brogan, *supra* note 6 (“The number of clandestine methamphetamine labs is growing and their locations are shifting from isolated, rural facilities to houses, trailers and apartments in more densely populated urban areas.”).

²⁷⁹ *See Hearing*—Green Testimony, *supra* note 82, at 29 (“There is an ongoing debate about the effectiveness of using a feasibility-based standard. Because research into the long-term health effects associated with clandestine laboratories has just recently begun, health or risk based standards have not been determined States are relying on the limited research available to determine

has not historically provided much assistance to the states,²⁸⁰ which are overburdened, understaffed, and underfunded in their attempts to address the problem.²⁸¹ A strong federal response to

the appropriate feasibility based standard.”); MRRA Background, *supra* note 19 (“States are at various stages in their attempts to address cleanup and remediation challenges. Some have a state standard, defined in parts per billion, for what is clean. Others only have guidelines, which range from ventilation and the removal of gross contaminants to the removal of drywall and other furnishings. Not much is known about the effectiveness of remediation techniques. Where standards exist, they are based on what is achievable, not human health.”); Staff Report, *supra* note 16, at 7 (“Without [health-based standards] it is impossible to determine what is clean and safe after a property has been used as a meth production facility.”); ASTHO—Issue Brief, *supra* note 16, at 3.

²⁸⁰ See Hearing—Murtha Testimony, *supra* note 20, at 3–4 (“Identifying and cleaning up the vast majority of methamphetamine labs is done by local and state governments, and methamphetamine labs do not generally involve scenarios that would trigger response under the Superfund law. EPA does respond in that small percentage of cases when local or state resources cannot address the problem.”); MRRA Background, *supra* note 19 (“EPA responds when the threat is ‘imminent and substantial’—the trigger under Superfund—but most small labs don’t rise to this level. DEA handles the bulk of the cleanup at the federal level, but this involves securing evidence and removal of gross contaminants—not the remediation of residual chemicals.”); Staff Report, *supra* note 16, at 7–8.

²⁸¹ See Hearing—Howard Testimony, *supra* note 8, at 49 (“The eradication of clandestine labs exacts a serious burden on local law enforcement and government budgets and resources. In preparation for taking down a suspected meth lab, local law enforcement must spend hundreds of man-hours in surveillance, background and undercover work. Briefings of law enforcement, EMS [(“Emergency Medical Services”)], and HAZMAT [(Hazardous Materials)] personnel must take place to insure the safety of all involved. OSHA [(“Occupational Safety & Health Administration”)] and PESH [(“Public Employee Safety & Health”)] required safety gear must be obtained and deployed, requiring expensive equipment and extensive training.”); Staff Report, *supra* note 16, at 7 (“Meth production in Tennessee, like the rest of the country, is concentrated in more rural areas where the county and local police, given their limited resources and manpower, struggle to keep pace with the growing problem.”); Jefferson et al., *supra* note 26, at 41 (“[F]ew municipalities, especially in rural areas, have the resources to deal with the drug’s ravages.”); Erik Johns, *Meth: Licking County’s Drug of Choice*, NEWARK ADVOC., Apr. 24, 2005, at 1A (“Fighting the meth problem requires resources: manpower, equipment, time, resources and money. In a time of increasing demands and dwindling budgets, law enforcement is finding it harder to control the problem.

this problem is important because methamphetamine—and the problems associated with it—has easily crossed state lines and jurisdictions.

The degree to which states have utilized existing standards is instructive. Washington, for example, has put considerable effort into addressing the problem using currently available information. The Washington standards are generally recognized as the exemplar in the area of methfield remediation. Even so, only a handful of states have subsequently “voluntarily” adopted the Washington standards, either in whole or in part. North Carolina’s guidelines, published in April 2005,²⁸²—could have easily incorporated the Washington standards. However, the guidelines have no provisions for certification of contractors, allows owners to conduct cleanup by themselves, and does not include any minimum levels of contamination.²⁸³ Thus, there is no independent reason to believe that states will adopt the recommendations created by the EPA just because they were developed by the federal government. As such, adoption should be mandatory.

President Bush has proposed major cuts and elimination of several federal drug programs, including those designed to fight meth.”); Peter Shinkle, *Man Convicted of Paying for Murder Escapes Death Sentence*, ST. LOUIS POST-DISPATCH, June 10, 2005, at B2 (“Caruthersville, with a population of nearly 20,000, has the highest per capita crime rate in the state, [Mike Hazel, prosecuting attorney for Pemiscot County] said. He said he has just one assistant prosecutor, and he appears likely to lose his sole investigator. ‘We’re short-handed and underfunded, as is the sheriff’s office,’ he said. Law enforcement there is overwhelmed, he said, noting ‘methamphetamine and crack cocaine are causing tremendous problems here.’”); Katherine Volin, *I’m the Law*, WASHINGTONIAN, Mar. 2005 (“Gary White [of Mineral County, West Virginia] says he has a problem shared by many small-county sheriffs: His office is ‘terribly underfunded.’ Counties of similar size have 14 deputies, but he has only eight. ‘Three or four years ago, we didn’t have a drug problem and—boom—now we got it.’ White, 58, says heroin, cocaine, and methamphetamine are all on the rise. ‘Law enforcement is never going to eliminate the drug problem, but you can address it—combat it somewhat—if you have enough manpower.’”).

²⁸² North Carolina Guidelines, *supra* note 18.

²⁸³ North Carolina Guidelines, *supra* note 18, at 12, 18.

Although nothing in the legislative history or surrounding materials addresses the rationale for voluntary guidelines, there are a few possible explanations. One possibility involves a desire to preserve federalism. The federal government may be reluctant to encroach on states' rights in this arena, and it may prefer that the states retain their autonomy so they can be more flexible and responsive to the unique problems posed in their jurisdictions.

This rationale is unpersuasive on two levels. First, in the context of drug policy, the federal government has not been historically bashful about subjugating state law to federal law. For example, in June 2005, the United States Supreme Court decided *Gonzales v. Raich*,²⁸⁴ which rejected a Commerce Clause challenge to the application of the federal Controlled Substances Act²⁸⁵ to medicinal marijuana grown and distributed legally under California's Compassionate Use Act.²⁸⁶ Even though the marijuana was grown and distributed entirely intrastate, the Court (relying on the aggregation principle established in *Wickard v. Filburn*²⁸⁷) deferred to congressional findings that locally produced and distributed medicinal marijuana could find its way into the interstate marijuana market.²⁸⁸

A similarly attenuated rationale could be used to regulate methamphetamine production and cleanup of production sites. Like the cultivation of medicinal marijuana, meth production in small clandestine labs is local, and the meth is most likely distributed or consumed locally. However, the aggregation principle applies even more forcefully in the context of

²⁸⁴ 125 S. Ct. 2195 (2005).

²⁸⁵ 21 U.S.C. § 801 et seq. (2000).

²⁸⁶ CAL. HEALTH & SAFETY CODE § 11362.5 (2005).

²⁸⁷ 317 U.S. 111, 127–28 (1942) (holding that an activity which has a substantial influence on interstate commerce by reason of its aggregation with other similar local activities throughout the nation, may be regulated pursuant to the Commerce Clause).

²⁸⁸ *Raich*, 125 S. Ct. at 2215 (“[T]he case for the exemption comes down to the claim that a locally cultivated product that is used domestically rather than sold on the open market is not subject to federal regulation. Given the findings in the CSA and the undisputed magnitude of the commercial market for marijuana, our decisions in *Wickard v. Filburn* and the later cases endorsing its reasoning foreclose that claim.”).

methamphetamine production because the number of “mom and pop” labs in the country is demonstrably high, and methamphetamine has eclipsed marijuana as the number one drug problem in America. The aggregation principle does not apply to methamphetamine production merely in the abstract, as it does to medicinal marijuana. It is being produced in forty-nine states.²⁸⁹ If the Commerce Clause allows Congress to regulate medicinal marijuana in California, Congress could regulate methamphetamine production in each of the fifty states.

Second, in the area of environmental regulation, the EPA has proven it can implement results-oriented regulations without unnecessarily undermining state autonomy. RCRA provides one example of this; the Clean Air Act (“CAA”) and Clean Water Act (“CWA”) provide two others. As discussed above, RCRA was intended to make waste disposal safer by encouraging recycling and development of alternative technologies, but was implemented so as to allow the states to maintain responsibility for their solid waste problems.²⁹⁰ The CAA and CWA are both results-oriented, setting air and water pollution standards that states are required to meet. However, states have broad discretion in their approaches to meeting those standards. As long as a state is satisfying its pollution reduction or maintenance goals, the EPA must defer to that state’s judgment.²⁹¹

Another potential rationale for making the guidelines voluntary is bureaucratic. The mandate created under the MRRA gives absolute discretion to states. The amount of funding required to implement the program is much smaller than it would have to be if enforcement and compliance were a federal issue. The MRRA is a

²⁸⁹ See Press Release—NMHC, *supra* note 5.

²⁹⁰ Office of Environmental Policy and Guidance, Department of Energy, Resource Conservation and Recovery Act Legislative History, <http://www.eh.doe.gov/oepa/laws/rcra.html> (last visited Apr. 20, 2006) (on file with the North Carolina Journal of Law & Technology).

²⁹¹ See generally *Union Elec. Co. v. Env'tl. Prot. Agency et al*, 427 U.S. 246, 265–66 (1976) (holding with regard to state implementation plans under the Clean Air Act that “[s]o long as the national standards are met, the State may select whatever mix of control devices it desires,” and that the statute “provides no basis for the [EPA] Administrator ever to reject a state implementation plan on the ground that it is economically or technologically infeasible.”).

cost-effective piece of legislation, appropriating only \$18,000,000 over four fiscal years (\$3,000,000 per year for the EPA,²⁹² \$1,500,000 per year for NIST²⁹³). Based on the relatively low numbers involved in funding the MRRA, it is possible that the MRRA has received such uniform support precisely because its guidelines are voluntary rather than mandatory. If there were more stringent requirements, there may have been higher costs associated with regulation and enforcement. Higher expenditures may have encountered stronger opposition.

As a result, the bureaucratic and administrative costs of adopting and implementing the guidelines created under the MRRA still fall largely on the states, as do enforcement costs. The enforcement requirements that would be present with mandatory guidelines are absent in the MRRA, meaning the EPA does not require additional funding to ensure compliance. Still, the EPA is not very enthusiastic about its role under the MRRA. Even in the face of all the evidence to the contrary, the EPA seems to believe that state governments are doing a fine job handling methfield cleanup on their own. According to Kim Olson, a public affairs specialist with EPA Region Seven in Kansas City, Kansas, "Most of the states have done their own guidance . . . specific to their own state and local needs, so we don't see a need to be prescriptive."²⁹⁴ Basically, it seems the EPA does not want to do any extra work on this issue unless it absolutely must.

VI. CONCLUSION

Methamphetamine has developed into the number one drug problem in the United States.²⁹⁵ The drug has the potential to not only destroy the lives of the users, but the cooking process and the toxic debris it leaves behind innocent individuals and communities. To date, the federal government has provided little more than

²⁹² Methamphetamine Remediation Research Act of 2005, H.R. 798, 109th Cong. § (9)(a) (2005).

²⁹³ *Id.* at § (9)(b).

²⁹⁴ Wagner, *supra* note 130.

²⁹⁵ See Busch, *supra* note 45. See also Brogan, *supra* note 6; Jefferson et al., *supra* note 26, at 41.

moral support and assurances to the states as they attempt to address an exponentially growing problem. Domestic efforts under the "War on Drugs" are still being directed primarily at marijuana, a plant whose potential destructive properties pale in comparison to those of methamphetamine.²⁹⁶

It is clear that current approaches are not working effectively, nor are they as responsive as they should be to the adaptability and evolution of the meth lab subculture. Likewise, states are not in a position to individually establish the information clearinghouses necessary to deal with detecting and remediating methfields. Thus, it is imperative that the federal government step in to consolidate existing resources and direct a course for further development.

The Methamphetamine Remediation Research Act has potential to be a useful tool in achieving this goal. While it is not perfect, it will provide the states with information and procedures essential to addressing methamphetamine-related problems on a local level, as well as tools for use in detection and cleanup. The MRRA is not the ultimate solution, but it is one important tool in the toolbox for solving the meth problem.

The fact that the MRRA merely authorizes research and does not require states to adopt the guidelines developed reduces the potential impact of the MRRA, and makes it less significant than it would be if the guidelines were mandatory. Even if the EPA did not require states to adopt particular methods of cleanup and detection, it should at least require states to meet minimum acceptable levels of chemicals at a methfield site. Such an

²⁹⁶ See Jefferson et al., *supra* note 26, at 41 ("The Bush administration has made marijuana the major focus of its anti-drug efforts, both because there are so many users (an estimated 15 million Americans) and because it considers pot a 'gateway' to the use of harder substances. . . . [T]hose fighting on the front lines say the White House is out of touch. 'It hurts the federal government's credibility when they say marijuana is the No. 1 priority,' says Deputy District Attorney Mark McDonnell, head of narcotics in Portland, Ore., which has been especially hard hit. Meth, he says, 'is an epidemic and a crisis unprecedented.'"); see also Transcript of *CNN Live Today* (CNN television broadcast Jul. 6, 2005) (discussing a National Association of Counties survey in which fifty-eight percent of responding United States counties indicated methamphetamine presented a larger problem than cocaine, marijuana or heroin).

approach would be similar to the attitude expressed under RCRA, CAA, and CWA; namely, "we don't care how you get there, just get there."

Additionally, the impact of the legislation would be further enhanced, particularly in the context of cleanup, if the scope of the research were expanded to include detection kits not only of methamphetamine, but also of constituent and byproduct chemicals. Finally, if the intent of the legislation is to develop health-based guidelines rather than technology or cost-based guidelines, the MRRA should clarify the criteria to be used by the EPA in creating them. As currently drafted, it is not clear that a health-based paradigm was intended to guide the EPA's inquiry so much as technological feasibility and cost-effectiveness. This is particularly important given the EPA's apparent reluctance to participate in the development of the guidelines.

The MRRA has a very good chance of being passed by the Senate since it had unanimous support in the House. An identical bill is already pending in the Senate. It appropriates very little money, which, when coupled with the fact that the states will be burdened by the costs of implementing and administering the eventual programs developed under the MRRA, makes it an appealing piece of legislation. Moreover, it deals with a very emotionally-charged topic that has very real consequences in our communities. It promises to be a source of positive public relations for campaigning legislators. It will be a missed opportunity for any Senator who chooses not to support this legislation. The MRRA is not perfect, but with a few modifications, it could indeed turn out to be just what the doctor ordered.

